





# Factoring

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## Farming and Raw Materials

### New U.S. copper settlement

NEW YORK, Sept. 1. THE American Smelting and Refining Company announced yesterday its copper refinery at Tacoma, Washington, is back in operation following a contract settlement with the unions.

The agreement was approved by the union membership on Tuesday night and furnace workers returned to their jobs to-day.

Agreement between Asarco and the steelworkers local at the Perth refinery was reached early to-day and is now awaiting ratification by the local membership.

The spokesman said the Baltimore Refinery is still strike-bound since the operating engineers local has not yet approved a new proposed contract. Steelworkers at the refinery have already ratified the three-year labour agreement.

Meanwhile, a spokesman for the union representing the workers at the Keno refinery said the local membership had rejected the proposed new labour contract.

However, they were continuing to work and negotiations with the company were continuing, the union official said.

The problem is implementation of the wage provisions under the terms of the President's 90-day price-wage freeze.

The workers want the company to guarantee remuneration either in money or fringe benefits whichever is allowed by the Government for the period covered by the 90-day freeze.

### Chile-Cerro deal claimed

SANTIAGO, Sept. 1. The opposition Christian Democrat Party will ask the Chilean Government for details of a reported agreement with the U.S. Cerro Corporation to handle the purchase of equipment and other materials for the nationalised copper mines here.

Sen. Narciso Irureta, chairman of the Party, said under the agreement, Cerro Sales (an affiliate of Cerro Corporation) would handle all purchases of equipment required in the U.S. by the Chuquibambilla, El Salvador and Escobedo mines formerly owned by Anaconda Mining Corporation, Reuter.

## Concern for British wool producers inside EEC

By Robin Reeves, Commodities Editor

CONCERN at the lack of protection for wool producers in the Common Market is expressed in the British Wool Marketing Board's annual report published to-day.

It points out that British wool producers are presently faced with falling world wool prices and mounting surpluses in overseas producing countries. Yet as matters stand in the EEC, the only protection available to sheep farmers would be the common external tariff of 20 per cent. on imports of New Zealand and other sheep meat.

There is no common policy for sheep and sheep products. Wool enters the Common Market freely because it is classified as an "industrial product."

### Favoured system

"Clearly, the tariff on sheepmeat would not compensate for the loss of the present U.K. guarantee on fat lambs and sheep, quite apart from the possible loss of the U.K. wool guarantee," the Board declares.

If the U.K. is to enter the EEC, offering higher thresholds for sheepmeat would be required to provide equivalent price support," it adds.

## Wool Commission heavy buyer

By Our Commodities Staff

CONSUMER demand at the Australian wool auctions yesterday—the second day of the 1971-72 series—showed little improvement over the first day, but a return of some Japanese buying interest brought firmer values, reports Michael Southern.

Generally, the Australian Wool Commission was a heavy buyer again. It took 23 per cent. of the Sydney offering on the first day, but in Adelaide the Commission's share of the offering rose to 31 per cent. against 23 per cent. the previous day, and it bought over 50 per cent. of the first day's offering at Albany, Western Australia. At Albany as much as 31 per cent. of the total was passed in.

The Commission will meet on Friday to review the week's activities and decide whether or not to increase the sales under the international monetary situation becomes stable.

Mr. W. J. Vines, the Commission chairman, said in view of the improved demand at Sydney it was unlikely this week's sales would be cancelled. He was much happier with the situation, he said, than the average price would rise to 35 cents a pound this season because of strong demand from overseas.

He admitted that the first day's operations at Sydney had cost the Commission about \$41.2m. and it is estimated that it has spent over \$41m. on the second day as well.

Mr. Vines denied that the Commission's activities had been a "barbaric" stand where in any way due to Government prompting aimed at pushing wool prices up to ensure that the estimate of \$460m. for its price averaging scheme announced in the Budget can be maintained.

If prices continue at their present levels, the Government contribution to the 36 cents a pound average will be around \$420m.

Mr. Vines confirmed that he has been in touch with senior Government officials on the drift in the wool sales, and that Mr. McMahon, the Prime Minister, had been in close touch by telephone.

Feeling generally is mounting in favour of cancellation of the sales for a while.

In New Zealand values at the first 1971-72 Christchurch auction fell some 5 per cent. for medium and strong halfbred fleeces compared with the recent Dunedin sale. Fine halfbreds were unchanged and crossbreds and second shears were in buyers' favour.

Portly months of the new international wool futures market that began trading yesterday, got off to a relatively quiet start with a turnover of 23

line with world market trends. The average price for the 1970 clip sold up to April 30, this year, was only 12.74p a pound, compared with 15.85p realised during the previous 12 months.

### Repeated warnings

The Board blamed the fall on two main factors—a downwards production cycle in the world's wool textile industries and the continued replacement of natural fibre by synthetics.

"This trend, about which the Board has issued repeated warnings, is sustained by massive financial investments by international chemical companies in the fields of textile production and marketing," says the report.

U.K. wool production in fact rose slightly in 1970, after three years of decline, to 69.5m. lbs. an increase of 700,000 lbs. or 1.1 per cent. up on the previous year.

Exports of U.K. fleece wool in 1970 totalled 29.7m. lbs. worth £7.3m. Italy continued to be the largest customer but took only 2.2m. lbs. of British goods compared with £2.8m. worth in the previous year.

### U.K. fruit consumption slow to grow

By Our Commodities Staff

DESPITE the growth in real incomes over the last decade, overall U.K. consumption of fruit in all forms has shown little evidence of growth, according to the latest issue of a Fruit Industry survey, just published by the Commonwealth Secretariat.

Consumption of fruit last year in terms of fresh equivalent was 121.6 lbs. per head, compared with an average of 121.3 lbs. in the five years 1960-64 and 120.8 lbs. in 1965-69. Fresh fruit consumption from Japan to the Great Lakes of the U.K. rose from 1.1m. tons in 1969 to 1.2m. tons in 1970.

In fact, between 1969 and 1970, consumption of fresh citrus rose by nearly 2 lbs. per head to 21.8 lbs. the highest figure recorded in recent years, but citrus fruit declined by about 1 lb. per head to 51.7 lbs.

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THE RECORD U.K. cereals harvest, being predicted a month ago, has not come true according to Mr. John Powling, managing-director of the Cereals Marketing Board.

He said that the harvest had been hit in its final stages by wet weather and disease. Even so it was "still far better than last year's disaster," which had contributed to the high 1970 prices for grain.

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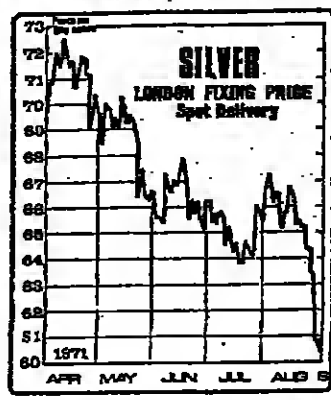
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## Silver down again

By Our Commodities Staff

THE decline in silver prices continued yesterday, with values in London falling yet again to the lowest level for nearly four years. The bullion brokers' morning fixing for spot silver was mixed down by 0.6p to 60.4p an ounce.

During the day there were trades both above and below this level, but by the after-



noon close prices were near to the morning fixing. On the London Metal Exchange spot silver closed 1.2p down on the day at 60.2p an ounce.

As usual, the pace in the silver market is being set by New York, where heavy liquidation of the open September position and disinvestment with silver's lack of response to the currency crisis has brought a rash of selling.

Yesterday, New York values fluctuated wildly. Margin calls and short-selling brought new losses, but these were offset by profit-taking buying. A fall of 757,363 ounces in New York market silver stocks had little impact on prices.

### Record harvest hopes dashed

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## MEXICO COPPER

# Government inspired expansion under way

By Alan Riding

THE "Mexicanisation" of investment programme for the foreign investors against expropriation as well as assuring access to essential raw materials.

As a result, Mexico is now having no difficulty in obtaining foreign investment and credit for its mining sector after years of being out in the cold. There is a problem in finding the necessary 51 per cent. Mexico also has resources for many projects. With limited domestic resources available, most Mexican investors still favour the manufacturing sector where profits are higher, consumption is assured and prices are stable.

"I think copper will become our most important mineral resource," says the Under-Secretary for Non-renewable Resources, Mr. Luis de la Peña Portillo, said in a recent interview. "First we have the resources, mainly in Cananea, La Caridad and Ingauran; secondly, Mexico's industry is consuming more and more copper, and the prices are reasonably high and relatively stable."

Mexico also has a fast-growing copper fabrication industry which should continue to absorb much of production. By working on the copper as much as possible before export, the Mexican content of the final product is increased in the same spirit as "Mexicanisation."

In copper, as in other sectors of the mining industry, the completion of Mexicanisation has stimulated an upsurge in investment, much of it from abroad. During the "Mexicanisation" process, there was considerable gloom in the industry, which led foreigners to divert their investment to other countries where no strings were attached and led Mexicans to invest in the manufacturing sector where profits were higher.

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## TWA judgment against millionaire Hughes upheld

greater depreciation allowances which the Administration proposed months ago, to the repeal of the 48 per cent. Excise tax on the sale of automobiles, to the 10 per cent. investment tax credit. Taken together these "wedges" would make 1971 the year of the greatest business tax cut in our history.

Mr. Okun's criticisms pinpoint the central difficulty of trying to manage the American economy, which depends so much on the enormous corporate sector. In

budget of the funds necessary to cure America's domestic evils. "How can anyone who sees the shame of poverty, the plight of our cities and the state of our environment want to cut into the tax base that offers the only hope for correcting these ills?" he asked.

This is not a fear confined to Democrats and economists. The Nixon Administration approved the tax cuts enacted by the Congress last year on fiscal grounds, and long-range budget forecasting by both the present (Republican)

Administration proposed there may also be even greater acceleration of the income tax cuts than that suggested by the President.

Mr. Okun went on to criticize the tax proposals on the grounds that they were themselves unbalanced in their effects on various industries. They would benefit the makers of capital goods and raw materials while ignoring "all other industries which produce nearly 90 per cent. of the national product."

NEW YORK, Sept. 1.

A COURT of appeals in New York to-day dealt another blow to Mr. Howard Hughes, the multimillionaire refuse, in the ten-year court battle stemming from Mr. Hughes' stewardship of Trans World Airlines.

The court upheld a lower court judgment awarding TWA damages of \$145.45m. for alleged violations of the anti-trust laws with regard to TWA's aircraft purchases against Mr. Hughes himself, the Hughes Tool Company and one of Hughes Tool's officers. The court also directed that the interest payable on the award be increased from 6 per cent to 7½ per cent.

were also directed last year to Hughes guaranteed that the net worth of Hughes' Tool would always remain above \$335m.

The total security posted exceeds the dollar value of the Bank of America, the largest judgment because court rules U.S. bank, plus a special \$88m. stipulate that such bonds should amount to 111 per cent. of the judgment.

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## Negotiations to extend Pacific coast railway

The case was first brought by TWA against Mr. Hughes back in 1961. His stormy relationship with TWA, which he owned through Hughes Tool, came to a formal end in 1966, when Hughes sold the company, passing ownership to the public in a share offering that netted Mr. Hughes well over \$550m.

However, the anti-trust case was dragged on for the five years since Mr. Hughes's proprietary connections with TWA were severed. It is quite possible that the Hughes interests will fight the case still longer and possibly all the way to the Supreme Court, which could mean that the case will not be finally decided for another year or two.

The original ruling that TWA was entitled to damages was made in September, 1968. The sum then determined was \$137m. April last year, the circuit court in New York City, Judge Kaufman, awarded interest on the damages, thus increased the sum to \$145m.

Mr. Hughes and Hughes' Tool

BY OUR OWN CORRESPONDENT VANCOUVER, Sept. 1.

NEGOTIATIONS are under way between the Provincial and Federal Government to expand the provincially-owned Pacific Great Eastern Railway northward from the Dease Lake area to the Yukon border on a shared cost basis.

A 420-mile extension of the PGE through the north-western region of the province to Dease Lake from Fort St. James is scheduled for completion in 1974. A 125-mile extension would take the line to the Yukon border.

Premier W. A. C. Bennett said the cost of the Yukon extension would be shared on formula basis between the Province and the Federal Government, which could in turn extend the line from the border to Whitehorse. The Premier expressed the hope that one day such a line could be extended into Alaska. The Yukon is now served by the 400-mile White Pass and Yukon Railway with a line between Whitehorse and Skagway located at the top of the Lynn Canal in the Alaska Panhandle.

In another move here, it has been announced by the British Columbia Hydro Authority that construction will begin next spring on a \$100m. Kootenay Canal power project to develop 500,000 kilowatts of new generating station to be built on the Kootenay River near Nelson in the East Kootenay region. A three-mile canal will divert water from the river at a rate of 30,000 cubic feet per second through the turbines and then back to the river. A new powerhouse will contain four 125,000 kilowatt generators.

The new generating station will use upstream storage water created by the Duncan Dam in British Columbia and the Libby Dam in Montana, two of the four dams constructed under the Columbia River power treaty.

## a crisis in St. Lucia

BY DAVID LASCELLES. RECENTLY IN ST. LUCIA

St. Lucia has been suffering from the classic flight of labour from the land. The banana fields always stood for drudgery, but still the tourism boom began in the mid-sixties there was little else. Then, with growing eagerness the rush for well-paid jobs in the city began. The fields were depopulated and the growing bananas was left to the landowners and their families. It has been calculated that a farmer with his wife and children can handle about five acres of banana without any outside labour. The flight of hired labour has therefore reduced many holdings to this size with the result that one land is going to waste and productivity has levelled off.

The task of attracting people back to the land is being tackled two ways. On one level, an attempt is being made to 'upgrade' the status of agriculture in children's minds. It is being

the middle of an important revolution. In 1969 growers dropped the centuries-old tradition of shipping bananas on the stem. Instead, they have begun to remove the hands on the estate and dispatch them in boxes which go right through to Britain. This practice is still being universal, apart from reducing handling, has lessened the possibility of fruit being bruised in transit. And now that the banana has a greater chance of reaching the consumer unscathed, growers are being urged to produce clean-looking fruit. Produce gets more expensive if they place their crop, and estates are now dotted with bright blue diethylene bags in which the stems are inserted. Few of these measures have actually saved costs, but they have ensured that a better banana comes out of St. Lucia.

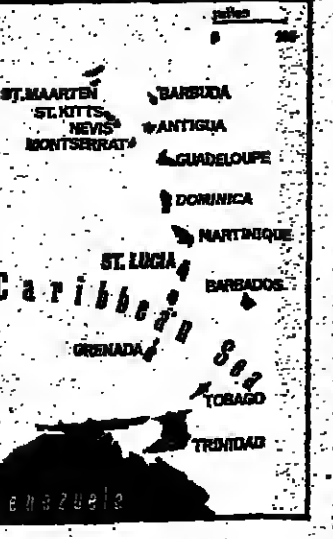
The Government's road improvement programme, which is extremely slow but equally sure, will eventually make the delivery of fertiliser swifter and cheaper and bestow similar bene-

trip to North America, where it is understood he found importers who were willing to buy St. Lucian vegetables, and the prospects are therefore encouraging.

Diversification outside agriculture is almost exclusively in tourism. The brand new and much envied international jet airport just opened at Beaufield in the south is proving a mixed blessing: anticipating a fresh boom, investors built several new hotels and expanded existing ones. During the next months alone another 300 beds are expected to come on to the market, bringing the total to 2,000. But so far there are only three scheduled flights a week, BOAC's weekly service from London and BWIA's bi-weekly from New York, bringing on average 30 people in each. Tourist chiefs despairingly point out that even if all three jets arrived packed with eager holidaymakers, they would only fill a third of the available hotel space.

The answer must lie in more packages tours. The only hotel to have gone into this seriously is

light as a special subject in which young St. Lucians are told they can take a pride. The one is that they will come to farming on a par with running a business or a factory, at a cruder level it is simply a matter of improving the financial returns. Because of the nature of the land and of banana as a crop, mechanisation is not easy. It will never be possible to reap banana stems even cut off the hands. Mechanically. Improvements are therefore being sought in other banana handling is already in





## Export News

## KNOW-HOW

## ICI plans to sell software packages

A CHEMICAL plant design simulation programme developed by ICI and widely used throughout the company has been purchased by AKZO, the Dutch chemical company.

Designated Flowpack, the computer programme, which was developed at ICI's central instrument research laboratory at Runcorn, Cheshire, is stated to provide a comprehensive, general-purpose programme for steady-state design and simulation studies of complete chemical processes. This type of programme enables engineers to carry out optimisation studies which can result in substantial improvements in the profitability of new and existing processes.

As a result of its extensive use by ICI in an industrial environment, Flowpack is reliable and easy to programme the company claims it can be used by engineers with limited computing experience. It is also comprehensive, flexible and highly efficient, ICI maintains.

ICI says this overseas sale of Flowpack is indicative of a trend to make more of the company's technical computer software commercially available to other companies. It is likely that programmes to perform a range of engineering calculations will be made available in the near future, ICI adds.

## BUSINESS IN BRIEF

## Taking ashes out of sackcloth

The Crown Agents acting for the Director-General of the East African Harbours Corporation have placed a contract worth £230,000 with GEC-Elliott Mechanical Handling—a CEC Elliott Automation company—for the supply, erection and commissioning of a bulk handling and conveying plant handling soda ash (sodium carbonate) at the port of Mombasa in Kenya.

Soda ash originating at Lake Magadi is delivered in bulk by box-car type rail wagons for export through the port of Mombasa, which has hitherto handled the product in bags. Due to an increased demand for bulk shipment, additional handling plant and considerable upgrading and refurbishing of existing equipment is now essential.

Material is extracted from the rail wagons into two existing covered ground storage areas each of 2,500 tons capacity and extracted for outloading by standard 3½ cubic yard capacity payloaders on to two conveyors conveying material to two conveyor belt systems which will deliver the soda ash in bulk.

Four new transportable conveyors will feed bulk material directly into the holds of a vessel lying alongside the quay. The rated capacity of the plant is 90 tons per hour and it is expected that commissioning will begin during April 1972. United Kingdom engineers for the project is the Mond Division of ICI at Northwich, Cheshire.

The Portuguese Company Eurofer (Fabrica Europeia De Ferro Maleavel, Sarr) has awarded Birlec an £85,000 contract for heat treatment plant for its foundry being built at Oporto. The contract covers the design and manufacture of continuous electrically heated furnace for annealing ferritic malleable iron castings. Sections of the plant will be built in Portugal to Birlec design, with Birlec manufacturing the remainder in the works at Aldridge.

## Making sure the big ones don't get away

MARCONI International Marine, which markets the Fishgraph R fishing echosounders, has made significant inroads in South Africa with its net monitors which use the same multi-stylus recording technique. Four stereo trawlers of the Irvin and Johnson fleet have been supplied with the monitors by Marconi Marine (South Africa).

Two more sets are being installed on the new freezer trawler Asalea, building at Hall Russell and Co., Aberdeen, and on the Crassula, building at James Brown and Hamer, Durban. Both are scheduled for delivery to Irvin and Johnson this month.

Further six installations, which will also provide water temperature recording facilities, have been ordered for four more similar vessels to be built by Hall Russell and another two on order from James Brown and Hamer.

## Capital for Tourist Project on Tenerife

On behalf of an international group we are seeking capital to be invested in a tourist project on Tenerife. Large real estate in a very suitable area is acquired with full security in deed. Construction plans are available. Apply for further information to: Informa Solinvest, Akersgt. 64, Oslo 1, Norway. (After Sept. 15, you may also contact Director Chr. Crosch, c/o Dr. Stange, Edificio Avenida, Puerto de la Cruz, Tenerife.)

INFORMA SOLINVEST A.S.

Parisentret, Drammensveien 20, Oslo 2. — Telefon 56 62 54 — 56 34 73.

## EXPORT PROMOTION

## Anglo-German banking talks at trade week

FINANCIAL TIMES REPORTER

INFORMAL talks between British and West German bankers will take place in Hamburg on September 20 within the framework of the British Week to be held there from September 17 to 26, the Export Council for Europe said in London yesterday.

This will follow a meeting of the Council of Ten in London on September 15. Meetings of the Six and the International Monetary Fund are also scheduled for that month.

The Hamburg meeting has been arranged on the initiative of Mr. E. J. W. Hellmuth, a deputy chairman of the Export Council for Europe, part of the British National Export Council, and leader of the ECE's German team. He is also executive director of the Midland Bank. Nearly a dozen British banks, including Barclays DCO, The Standard Bank and Lazard Bros., will be going to Hamburg. They will be led by Mr. Gordon Richardson, chairman of J. Henry Schroder Wagg and Co.

This Anglo-German Banking meeting will take the form of a working dinner, at which the host will be Sir Roger Jackson, British Ambassador in Bonn. German guests will be headed by Dr. Alwin Muenchmeyer, chairman of the Bundesverband des Privatbankwesens.

"The British Trade Week has all along placed great emphasis on Britain's 'invisible' assets such as her world financial services," the ECE says.

Sir Roger will also be host at an informal dinner to discuss international insurance.

He will also be at a series of seminars and conferences with deal with Britain as a trading partner.

mainder in the works at Aldridge.

The twin track tray pusher furnace will treat up to 730 kg/hr of castings, mainly pipe fittings and parts for the motor industry. The furnace, which is heated throughout by electric tape elements, is divided into eight zones each independently controlled so that accurate process conditions are continuously maintained. The installation is rated at 800 kW.

Incorporated in the installation will be mechanised charge handling equipment.

The British Clothing Export Council is among the backers of "Mod Americana 71," a five-day fashion show to be held in Acapulco, Mexico, from November 22-26.

British designer Ossie Clark will be among the designers represented at the show. Apart from the clothes displayed, there will be an international modelling competition in which British girls will take part.

The event is being organised by Selmanman, by Robert Behar of the Mexican Tourist Authority.

Montenmerie-Reid, manufacturer of battery electric fork lift trucks, has received an order from George E. Taylor (Overseas) for the supply of two MT20, 2240 lb/1250 kg capacity machines, for a flour mill project being carried out in Qatar in the Persian Gulf. The flour mill will have an output of 100 tons per day and the MR fork lift trucks, fitted with tropical batteries and chargers, will be used for the movement of raw materials and finished products.

A £136,000 order has been awarded to Dexon Overseas, of Wemyss, Midlothian, by Laboratorios Glaxo SpA, of Verona, part of the Glaxo Pharmaceutical Group, for remotely-controlled storage equipment at a new warehouse.

## Making sure the big ones don't get away

These vessels fish in depths of 300 fathoms and more, with something like 5,400 feet of warp in the water. The multi-stylus net monitor shows a skipper if his net is fishing properly and maintaining the correct attitude for optimum results. It also lets him see fish actually entering the trawl, and shows the increase of distance between headrope and bottom as the cod-end fills. Since the equipment is upward-looking, it is as good as downward-looking, it will also show if heavy concentrations of fish should be swimming just above the trawl mouth so that they may be missed unless the trawling depth is adjusted.

The multi-stylus net monitor is a GEC-Marconi Electronics consists of a battery-powered computer.

## An airline to serve Zambia's outback

SPENCER AVIATION, the London-based international aviation company, is joining with Zamair of Ndola and Klwe and Skytravel of Lusaka to form a public company operating in the fields of aircraft sales, maintenance and air charter in Zambia.

The new company will be named Zamair and will offer nationwide charter services and internal feeder services. In Zambia where the air transport industry is of vital importance to the national economy.

Application has been made to the Zambian Government for Zamair to operate 15 aircraft ranging from Britten Norman Islanders to Learjet 24s. In addition, Zamair Airways has approved the operation by the new company of scheduled services in rural areas, to act as feeder services to Zambia Airways.

Until recently, small air companies in Zambia have been competing unsuitably and rationally into larger commercial

units is seen as a step towards handling Zambian industry generally and the local air industry itself.

A director of Spencer Aviation has been invited to join the new company to assist in its initial organisation and administration. Zamair will be capitalised at £300,000.

## Meanwhile — back on earth

POSMAC EXPORT, the international marketing company formed for the Fosco Construction Services Group, has won orders for more than 25,000 plastic WC seats from Harward Marchants of Zambia, a division of the Zambian State Trading Organisation INDECO.

This is a record export order for the Group, whose members include Robert McCard and Company of Denton, Manchester—the largest manufacturers of WC seats to the United Kingdom—and its subsidiary company, Celmec (Ireland) of Wicklow, Republic of Ireland.

The plastic seats, ordered for general distribution throughout Zambia, were made at Wicklow by Celmec (Ireland). Orders were confirmed by Alfred Field of Birmingham.

## Pop bins in Canada

THE Volumatic Company of Coventry has appointed an agent in Canada for its range of point of purchase and display products.

Laurentian Agencies of Quebec, a subsidiary of the National Drug and Chemical Company of Canada, has been given an agency in Canada for the company's Pop bin—a transparent, plastic sphere-shaped retail sales bin.

An initial order for 600 units has been placed with the Volumatic Company following the agency appointment and inquiries are in hand for a further 2,500 units. The 600 units will be used by the National Drug and Chemical Company as a sales promotion aid in its own group of retail pharmacies which include the Co-op Neighbour Pharmacy, the Chance Company, Spencers, and Top Volume Stores.

With annual sales of \$85m, the National Drug Company claims to be one of the largest groups in its field in Canada. This latest agreement means that the Volumatic Company now has agents for its Pop bin in Holland, France and Canada with a licensing agreement for the product in W. Germany.

## New office permits top 7m. sq. ft.

Financial Times Reporter

OFFICE DEVELOPMENT permits for 7.7m. square feet of floor space were issued in the second quarter of this year, according to the Department of the Environment.

The 145 permits, after deduction of relinquishments of existing floor space and allowing for permits for the continuing use of existing offices, represented a net potential addition to office accommodation of 3.5m. square feet.

In the first quarter of 1971, 131 permits were issued for 7.9m. square feet. The potential addition of office floor space in that period amounted to 3.2m. square feet.

The figures are not comparable with statistics for permits granted during the same period last year because of the changes in control introduced in December, 1970.

According to the Department, 33 per cent of the permits issued during the second three months of this year covered 6.5m. square feet of space proposed for development within the Metropolitan region. In the previous quarter, the corresponding figure was 37 per cent, covering 7.2m. square feet.

Permits issued in the Greater London Council area accounted for 61 per cent of the total number issued and those in central London about 37 per cent, compared with 70 per cent and 41 per cent respectively for the same areas in the first quarter.

The area relinquished for demolition and change from office to non-office use increased from 800,000 square feet to 1.3m. square feet in this central London area over the last two quarters, and accounted for 48 per cent of the total area relinquished.

## CHEAP AIR FARE FOR STRANDED U.S. STUDENTS

TRANS WORLD Airlines and Pan American said yesterday that they had been given official approval by the U.S. Government to make available a special one-way youth fare from London to America to help stranded American students, many of whom had been studying at Heathrow Airport.

An airline spokesman said that the fare was 30 per cent off the current youth fare and that students who were in trouble could fly home for £43.75. In order to qualify for the fare they would have to be U.S. residents with valid passports, be able to supply names and addresses of their parents and to prove they were in financial trouble.

## £35m. prototype fast reactor 'in operation by end of 1972'

FINANCIAL TIMES REPORTER

BRITAIN'S £35m. prototype fast reactor is nearing completion here, and would be in operation towards the end of 1972, according to Mr. Peter Mummery, director of the Dounreay establishment. Commissioning trials would begin early next year.

"I think this is opening a new era not only for this country but for the rest of the world," he told an international party of Pressmen visiting the plant.

The party included journalists from Japan, China and the U.S. who are here preparatory to the opening in Geneva next week of the United Nations' fourth international conference on peaceful uses of atomic energy.

The running cost of a commercial fast reactor would be about one quarter of a conventional power station. Building costs, however, would be about one third more, Mr. Mummery explained.

## Main feature

The main feature of the plutonium-fuelled fast reactor is that it reproduces plutonium in excess of its own needs.

The PFR, which will produce 250 MW, is vastly superior to the 14 MW experimental fast reactor started at Dounreay in 1959.

The new fast reactor, which is the U.S. Germany and Japan had based on research work of the Dounreay fast reactor, will be able to supply enough electricity to the National Grid for a city the size of Aberdeen.

"The fast reactor is really the key to the fuel exploitation of the world's uranium resources," Mr. Mummery said.

Electricity supplied by the PFR could bring in, at present rates, an income of about £4m. a year.

## Lead station

Mr. Richard Moore, a member of the U.K. Atomic Energy Authority, said a strategic plan had been thrashed out "which will lead to an option to build a 'lead' station, starting construction in 1974."

"After an interval of time this could be followed by an installation programme of fast reactor power stations." The electricity authorities should have at least one fast reactor station producing electricity before 1980, he claimed.

Britain, which had long held a lead in the development of the fast reactor, hoped for overseas orders, Mr. Moore added. The USSR was well advanced towards completing its own prototype station, France had a prototype under construction and Dounreay.

DOUNREAY, Caithness, Sept. 1

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## Hawker Siddeley confident of big sales for executive jet

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

HAWKER SIDDELEY AVIATION is confident of substantial further sales of its HS-125 executive jet aircraft, and foresees the production line at its Chester factory continuing for many years to come.

The company expects to announce soon the sale of its 250th HS-125, of which no less than 198, worth over £75m, have been exported.

This was revealed here today at the Business and Light Aircraft Show at the Cranfield Institute of Technology where a wide range of British and foreign general and business aircraft were put on display—in the highest show of its kind yet held anywhere in the world outside the U.S.

The emphasis at the show is on promoting the use of business aircraft among U.K. companies in the light of Britain's bid to enter the Common Market.

Spokesmen for the manufacturers, distributors and dealers of all kinds of business aircraft here confirmed that a period of depressed conditions business aircraft utilisation was now increasing and the volume of inquiries from companies interested in this form of aviation was now also expanding.

As yet, this interest has still to be reflected in firm sales, but it is hoped that as a result of this

show which extends over the next few days until Sunday, the U.K. manufacturers and distributors of light and business aircraft will be able to consolidate into firm orders the high volume of interest being shown here.

One of the most significant exhibits is the Russian Yak 40 three-engined business and light transport aircraft, currently the subject of a major Russian overseas sales campaign.

At least 15 different types of aircraft are on display and during the course of the show, the chairman and chief executives of over 80 of Britain's biggest companies will be visiting Cranfield at the invitation of the Business Aircraft Users' Association. Flight International (the aeronautical journal) and other bodies interested in aviation will also be present to gain at first hand some knowledge of what business aircraft have to offer.

It was announced here today by International Aeradio that the Government of Somalia has signed a contract worth more than £340,000 with the company to provide air-traffic control and telecommunications equipment for the new airport at Mogadishu.

It was also announced that Quinton Hazell, the motor component group, had bought a

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# Stormont welcome for Chequers talks qualified

BY ROY HODSON

BELFAST, Sept. 1.

THE Stormont view of next Monday's hastily convened meeting between Mr. Heath and Mr. Lynch is that it is a sensible move, if relations between the British and Irish Governments are to be prevented from deteriorating further.

But such a pragmatic attitude among Mr. Faulkner's principal supporters is not shared throughout the Unionist Party. Complaints are voiced to-night by some Unionists (not all of whom can be clearly labelled as "hard-liners") that a meeting at such a critical time after serious incidents on the border will amount to the two premiers talking over the heads of the Stormont Government.

The Stormont Administration is adamant on one point. It does not expect Mr. Heath to permit the talks to dwell on the internal affairs of Northern Ireland. It would be intolerable to Northern Ireland, it is argued, if such matters were to be touched upon without Mr. Foulkner's presence.

Northern Ireland can be said generally to welcome the meeting between the two men. It is seen as offering at least the possibility of a move out of the present impasse during the whole IRA campaign has caused more general alarm in this province

## Dublin also wants action

BY DOMINICK J. COYLE

DUBLIN, Sept. 1.

THERE is no great surprise here that Mr. Lynch's meeting with Mr. Heath is being brought forward. Ministers have been insisting that events in Northern Ireland were deteriorating so rapidly that it would be suicidal to wait until October.

It is claimed here that a mere exchange of views on the crisis at next week's talks will do nothing to curb the violence. What Mr. Lynch will be seeking is some concrete evidence that the British Government is prepared to take a major political initiative over Northern Ireland.

### Large gap

There is certainly satisfaction on the Irish side that Mr. Heath should have taken the initiative to bring forward the meeting, particularly in view of the recent frosty exchange of telegrams

between the two Prime Ministers. Mr. Haith's move is also seen here as an indication that Britain is now genuinely concerned to try to find an acceptable formula for bringing peace and community harmony to the North, and that it also accepts that Dublin has a role to play.

However, there is no great optimism at official level about an early breakthrough.

There is a clearly a very large gap between the two Prime Ministers, especially following Mr. Lynch's call last month for the abolition of the Stormont Government in its present form and its replacement by a new form of administration in which Roman Catholics would have representation roughly proportionate to their numbers.

The Irish Government certainly anticipates that Mr. Heath will seek its active co-operation in steps to counteract the terrorist activities of the IRA. Indeed, it is now taken for granted that Mr. Brian Faulkner, the Northern Ireland Premier, has already sought to convince the British Government that the gunmen are the real problem in Northern Ireland.

Political package

Mr. Lynch will certainly not accept this, and he is likely to reply that terrorism is an end product of years of repression of the minority by Stormont rather than a cause of the present crisis.

He will not be disposed to take action against the IRA here (possibly including internment) unless it is part of a major political package aimed at "re-formulating" the present Stormont administration.

Conference switched

ULSTER'S hotel industry was dealt a blow yesterday when an international conference was to be held in Northern Ireland next month was switched to Geneva because of the crisis.

The congress of delegates from the International Motorcycling Federation was to have been held at Larn, Co. Antrim.

When news of the cancellation reached Belfast yesterday, Northern Ireland Tourist Board chiefs were in Glasgow trying to boost the holiday trade.

Hoteliers have called the summer season disastrous. Bookings have been the lowest ever.

Top hotels in Belfast's centre have been forced to lay off staff. One has closed an entire floor because of bad business.

"For some of us it is just a case of how long we can last," said one manager.

There seems little prospect of an improvement, at least until the end of the year and God alone knows when that will be.

Tourism made £23m. for Northern Ireland last year, of which it was most unlikely to be passed in 1971.

### Box girder bridge safety code issued

MEASURES to tighten-up safety rules in the construction of steel box girder bridges are to be implemented immediately on all current and future trunk road and motorway contracts.

The Department of the Environment announced yesterday that procedure instructions had been issued to all engineering offices engaged in the design of the bridges. Their adoption is also urged in a Department circular to local authorities.

The move follows the acceptance by Mr. Peter Walker, Secretary of State for the Environment, of seven recommendations contained in the interim report of the Merriam Committee, set up after the collapse 14 months ago of the Millford Haven bridge.

The Department said other recommendations of the committee were still under consideration and consultations with the industry would be necessary.

Traffic on 42 box girder bridges throughout the country has been restricted to a single lane and further 81 under construction will not be opened until full technical inspections have been carried out. The Department of the Environ-

## Ballet Rambert in theatre project

THE BALLET RAMBERT has submitted a planning application to Kensington and Chelsea Council for permission to build what would be the first theatre in England designed specifically for ballet. If it is given the go-ahead the development, at the junction of Pembroke Road and Ladbroke Road, Notting Hill Gate, should be finished in four to five years.

It would include a 750-seat theatre and a four-storey office block on a site partly owned on behalf of the Ballet Rambert.

Government permission for the office development on this site has already been obtained and internationally accepted chairman.

Mr. Joe Cahill, leader of the Belfast IRA Provisional left Dublin to-day for America where he hopes to raise funds, arms and ammunition to fight British troops in Ulster. The trip is expected to last about five weeks. He will tour several major American cities and is scheduled to appear on television.

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The site is now occupied by a house, a car park and a public house. Ballet Rambert said that the houses and the car park are owned by the Mercury Theatre Trust, which controls the ballet company.

The trust came by the land in the 1930s when Mrs. Ramberg's late husband, the playwright Ashley Dukes, bought property in the area. He always intended some of the land to be used for a ballet theatre for his wife's company.

The Ballet Rambert, of which Mrs. Ramberg is a director, gives London performances in the Jeannette Cochrane Theatre, which was not built for ballet.

The new theatre would be so international dance centre, offering facilities usually found only to the U.S. or on the Continent. It would be used by the Ballet Rambert and visiting companies. The design will not preclude production of plays and operas.

The Ballet is being advised in the design by Messrs. Green and Smith, the surveyors. Arup Associates are the development architects. The theatre is being designed by Peter Moro and Partners, who are based on the Nottingham Playhouse and the Bristol Old Vic.

## Argentine route freight rates to go up 6%

By James McDonald

SHIPPING LINES within the Argentine-Europe Freight Conference, operating northbound from the River Plate to the U.K. and Eire, have announced that because of "ever-increasing operational costs," another increase in freight rates of 6 per cent. is to be introduced from November 1.

Application of the 3 per cent. increase in net freight rates, which has been in effect since the 1st of July, but the shipping lines also point out that the 10 per cent. bonus in favour of shippers (customers) who load for the U.K. and Eire on conference vessels exclusively is still in force.

Member lines of the U.K. and Eire section (northbound) of the conference are: Blue Star Line; Cia. Argentina de Transportes Maritimos (CAAT); Houlder Brothers; Lamport and Holt Line; Lineas Maritimas Argentinas (ELMA); and Royal Mail Lines.

### Keddies opens stage two of expansion

By Sheila Black

A NEW extension, stage two of an expansion and development programme for Keddies, the South-east store, opens to-day.

It is the enlargement, northwards being built on to stage one, which is the main store, of the original High Street store in 1963 and incorporated a 50,000 sq. ft. office block. Since the opening of stage one, sales have multiplied fivefold, according to the directors.

### M & S cuts women's wear prices

MARKS & SPENCER introduces lower prices from to-day in its 247 stores on many women's fashion ranges, representing nearly 60 per cent. of the autumn savings are up to 12½ per cent. and are the result of a continued drive for efficiency by the company and its suppliers, said a spokesman.

Examples (old prices in brackets) are:—

Crimplene or polyester pants £2.49 (£2.89); nylon pants £2.49 (£2.89); pleated-style pants suits £2.50 (£2.99); £7.50 (£7.99); Junior boys' dresses £2.49 (£2.79); £3.75 (£4.25); women's pinafore dresses £4.99 (£5.25); lined Crimplene skirts £2.49 (£2.75); printed Courteille jumpers £1.99 (£2.20).

### £3m. Mitcham development

A £3m. development for Mitcham, Surrey, is announced by Amalgamated Investment and Property which has exchanged contracts in purchase a 12½-acre factory estate in Streatham Road, Cadbury Schweppes.

It will be developed as an industrial and warehouse estate. The acquisition involves the purchase of the Amalgamated plans to provide approximately 338,000 square feet of modern industrial and warehouse accommodation, which will include the renovation of approximately 100,000 square feet of modern factory accommodation already on the site.

## Bid to save docks modernisation deal

BY ALEX HENDRY, LABOUR REPORTER

A NEW ROUND of joint talks to clear the union threat to cancel the London docks modernisation pay deal began yesterday.

Only one of the two dock unions — the Transport and General Workers' — has given notice that it wants to end the year-old agreement. The executive of the National Amalgamated Stevedores and Dockers Union meets later this week to consider its position.

The threatened crisis has been forced by the employers' refusal to meet a 15-point wage claim from the two unions. The employers are insisting that there can be no wage improvement for the 10,000 dockers covered by the existing deal until there is an improvement in productivity.

Union leaders are now pressing for an increase on the grounds of an increase in the cost of living. They argue that since the agreement came into force last September, purchasing power of their members' wages has risen over 10 per cent.

The two sides are to meet again next week. At yesterday's meeting the union leaders said they hoped it would not be necessary to carry out the threat to cancel the modernisation agreement. The decision to cancel was taken by the lay committee of the TGWU, and it lost some force when Tilbury dockers—who are included in the modernisation scheme covering enclosed docks in the Port of London—on Tuesday expressed strong disagreement with the decision.

### Lightermen

The modernisation pay deal for London's lightermen—delayed because of a dispute over work-sharing for 180 unattached men—will be introduced at the end of this month. The problem of the unattached men who are surplus to requirement but will be negotiated after the deal is introduced. The new agreement brings the lightermen—whose union recently merged with the Transport and General Workers'—into the modernisation scheme.

## 6½% knitwear pay offer 'ridiculously low'

BY MICHAEL HAND, LABOUR CORRESPONDENT

THE 60,000-strong National Union of Knitwear Workers yesterday rejected a 6½ per cent. pay offer, which Mr. Peter Pendergast, its president, described as "ridiculously low" and not even a starting point for serious discussion.

The offer, affecting some 100,000 workers in the industry, would mean rises of £1.00 for men and £1 for women to be paid in two equal instalments in January and February next year. The union is demanding £3 for men and £2 for women on a similar basis. Average wages for the experienced workers covered by the offer are present about £25 for 40 hours a week and about £15 for women.

Union leaders also want to negotiate a permanent cost of living regulator which would give a flat increase to every worker of 10 per cent. over the next six months. The claim for six monthly intervals. The claim also includes an extra week's holiday with pay and improvement in their guaranteed week agreement.

### CARR DECISION HALTS FINE TUBES PROTEST

A PLANNED demonstration outside the Fine Tubes factory in Plymouth on September 17, for men and about £15 for women. The union is demanding £3 for men and £2 for women on a similar basis. Average wages for the experienced workers covered by the offer are present about £25 for 40 hours a week and about £15 for women.

### Hospital lab workers in blood-tests ban

ABOUT 400 hospital laboratory technicians started to ban blood tests in the East Midlands yesterday in support of a demand for full negotiating rights.

The members of the Association of Scientific, Technical and Managerial Staffs refuse to do blood alcohol and post-mortem tests. They also ban week-end and evening work.

But emergency duties will still be carried out. The ban affects hospital blood samples taken by police from drivers and sent for independent analysis.

The technicians' sanctions are due to be supported by a two-day strike next week, also affecting other parts of the country to further the claim. An Association spokesman at Nottingham said the ban was aimed at "getting the authorities back round the pay negotiating table."

### £2,000 MINIMUM PUB PAY CLAIM

A claim for £2,000-a-year minimum pay to be put to Britain's brewers by leaders of 10,000 public house managers. Mr. John Lewis, president of the National Association of Licensed House Managers, said yesterday that the managers now earned an average of £20 a week.

### EEC entry: 'impossible to assess' either case

BY WILLIAM KEGAN, ECONOMICS CORRESPONDENT

IT IS impossible to assess the economic case for or against U.K. entry into Europe in abstraction from political judgments, according to the National Institute of Economic Research.

This conclusion is reached after a survey of the main economic arguments, including some of the research methods which has been used in recent Commons debates.

One of the main new arguments used by supporters of entry is the effect on the efficiency of the economy which are said to have resulted from the formation of the EEC, and to have been reflected in a fall in the ratio of export to domestic prices of member countries during the 1960s.

The Institute says that an efficiency gain can be calculated on certain assumptions, but that the question whether this gain is automatic for new entrants is another matter, which might be partly answered by inspecting the efficiency of EEC countries' experience, but could always be held to depend in any case on appropriate decisions being made about the exchange rate.

The article says the experience with export prices of the EEC countries was not uniform during the 1960s, and that a similar phenomenon was evident for non-member countries.

## Rolingo

SHARES MOVE UP AGAIN

Due to favourable developments in the second half of the past financial year ROLINGO's overall performance has definitely not been too bad. Our shares are now moving up again. This we owe to our aggressive buying policy in the second half of the financial year, when we reduced our liquid assets from about 15 per cent. at the end of December to virtually nothing at the end of the financial year. Apart from this, a loan of \$10 million was floated on the Eurodollar Market at 7½ per cent. This loan was fully invested.

We have, moreover, taken advantage of the price increase in gold during the currency turbulence in May to sell half of our holding of gold and to use the proceeds to buy back shares at a discount in times of disquiet.

More exceptional was our action to counter anticipated currency problems. To this end we made a forward sale against D.Marks of \$20 million at the old rate of DM 3.63 for \$1. Since then the Swiss franc has been revalued, and the D.Mark has been floating above its old parity.

### INVESTMENTS

In the first quarter of 1971 we made purchases in the U.S. worth more than £1.78 million on balance.

In Japan we found many companies of a high standard, with better growth prospects and yet, at the same time, considerably lower stock market prices, than in the United States and Europe. That is why we have considerably increased our interest in that country from 12 to nearly 22 per cent.

After the United States and Japan we have made our main purchases in Great Britain, where we more than doubled the small percentage of our holding.

### RESULTS

In the past financial year the company's ordinary share capital rose from £1,400,000 to £1,444,300. As a result of the price increase and the issue of new shares during the past year the company's net assets, including the bonded debt, rose by 30 per cent. from £1,500 million to £1,992 million.

At the end of the financial year the value of a share, including issuing costs, was £1.196, which is a rise of 20 per cent. from the figure of £1.163 at July 1970.

An amount of £1,400,000, including the balance brought forward from last year, is now available for appropriation. We propose the payment of a dividend on the Ordinary Shares of £1.3 (1970-71) on the capital as increased by the 1 for 10 scrip issue of 2nd August 1971.

Copies of the full Report and a descriptive booklet may be obtained from the Company—

ROLINGO NV, P.O. BOX 973, Rotterdam.

## Letraset Limited

Key points, from Chairman's Statement and Accounts for the year ending April 30th, 1971.

**Profit** increased to a record level with an overall increase in sales of 23 per cent. and improved margins.

**Dividend** increased from 10 to 14 per cent. in view of prospects and improved liquidity position.

**Exports** increased 25 per cent. and accounted for over two thirds of total sales.

**Prospects** The first quarter's results show further increase in both sales and margins. Profits in the current year are anticipated to show an appreciable increase on the year under review.

### The Year at a glance

	1971	1970	Increase
£000	£000		
Sales	5,354	4,343	23.3%
Profit before tax	477	303	57.4%
Profit before tax as percentage of sales	8.9%	7.0%	1.9
Profit before tax as percentage of sales employed	20.6%	13.1%	7.5
Dividend	14.0%	10%	4.0
Earnings per share	3.14p	1.41p	122.7%

## COURTNEY, POPE (HOLDINGS) LIMITED

PRELIMINARY STATEMENT FOR FINANCIAL YEAR ENDED 31st MARCH 1971

Preliminary unaudited figures for the past financial year indicate that the group's profits, before taxation, will achieve £200,000 for the first time in the history of your company.

Your Directors intend to recommend a final dividend of 2½p per share less income tax which together with the interim dividend of 1½p per share makes a total distribution for the year of 4p—20 per cent.

At the Annual General Meeting last December the issued ordinary capital of the company was increased by 0.1 for 5 scrip issue and your Directors forecast a total dividend for the year of not less than 17.5 per cent. against an effective equivalent of 16.7 per cent.

The aggregate payment of 20 per cent. on the new capital thus constitutes an increase of 2.5 per cent. over that forecast and 3.3 per cent. above the equivalent actually paid in 1970.

L. R. COURTNEY, Chairman

25th August, 1971.

## Invergordon Distillers (Holdings) Limited

Extracts from the Chairman's Review and Accounts at 31st March, 1971

The profits of the company show a further increase, notwithstanding the constraints of substantially higher labour and raw material costs, coupled with less than buoyant markets in the Scotch whisky industry.

Sales again advanced and significant progress continued to be made in developing the overseas markets for Findlay's Finest and our other blended Scotch whiskies.

It is hoped that the steadily improving trend in the company's trading will be maintained in the current year and a modest increase in profits is expected.

Turnover for the year £3,061,944 (£2,496,189)  
Net profit for the year (tax nil) £202,086 (£91,052)  
Report and accounts available from the Secretary, 1, Wimpole Street, London W1.

## S&U Stores Limited

Extracts from Mr. C. Coombes' statement

Turnover Despite the most serious and difficult trading conditions, our sales for the year ended 31st March 1971, showed a significant improvement over the previous year (1970-71) of £1.18 million.

Profit Pre-tax profit was £574,243 for the year compared with £556,428 for the preceding twelve months. Post-tax figures were £442,886 (£399,274).

Dividend A 15% final dividend on the cumulative preferred ordinary shares, making 25% for the year, and 5% dividend on the ordinary shares, making a 10% total, are proposed.

Edgbaston Street, Birmingham 5. Telephone 021 643 6571.

recommending. Retained profit is £1,257,356 (£91,400) and our group balance sheet shows an increase in net current assets and capital and revenue reserves.

Subsidiaries Mail order continues to make encouraging progress and these companies are in our list of profit makers. Next year all group companies should be operating profitably.

Conclusion Your directors are looking forward to even more encouraging results in the months and years ahead.











15.9p  
1000

# The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

## RESEARCH

### Providing a service to management

More than any other association, the Electrical Research Association has in the past few years gone out to seek new areas in which the talents of its members could be applied to management. The direction of the Association's efforts is now being concentrated on the management of research and development, and the Association is expected to complete a study of the needs of management in this field.

The Electrical Research Association, which has a membership of over 1000, is a not-for-profit organisation. Its main purpose is to provide a service to management in the field of research and development. The Association's efforts are now being concentrated on the management of research and development, and the Association is expected to complete a study of the needs of management in this field.

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Private venture

The theme of value for money is one which also pervades ERA's own computer bureau, now launched as a separate private venture under the name of ERA Computer Services. Its head, P. W. Addison, makes no bones about the fact that he is getting many clients among producers of small machines who despair at ever getting back what they have invested, and claims that he can do for them what he has done for the larger companies. He says that he is getting many clients among producers of small machines who despair at ever getting back what they have invested, and claims that he can do for them what he has done for the larger companies.

HEATING

### Air heaters for home and factory

DESIGNED for installation in homes, retail shops or factories, the range of gas-fired air heaters made in Holland has received British Gas Council approval.

Warm air is distributed by means of an electrically driven fan which is vibration-free and almost silent and at the same time has sufficient capacity to be used for cooling or forced ventilation. Speed of the fan is adjustable between 0 and 1450 rpm and any change in fan speed results in a change of speed of the fan.

INDICATOR

Final adjustments being made to a Brink air heater in the company's factory in Holland.

The company's factory in Holland.

Fumes are not blown back

Improved electronic system which gives cleaner combustion and other advantages is claimed as a major innovation in the Mark 3 range of automatic oil-fired air heaters introduced by Del Sol Air Systems of St. John's, Leeds.

Slurry is heated quickly

THE simplest of heating processes—injecting hot combustion gases directly into a liquid—is used to heat kaolin slurry for pre-cipitation of impurities.

Twelve data circuits to share line

UP to 12 data terminals, each operating at 110 bits per second, can now share a private long distance telephone circuit using a new service launched yesterday by the Post Office.

Undersea location aids

EXPLOITATION of undersea oil and gas and greater interest in commercial fishing has led to the development of additional aids to marine work.

## PRODUCTS

### Optical source and detector

NOW available from the newly formed Industrial division of the Grove Trading Estate, Dorchester, Dorset, is a miniature photo-detector and light source link intended for use in applications such as batch counting, mark reading, code reading, colour sensing, speed monitoring, flaw detection, machine tool control and intruder alarms.

CONSTRUCTION

### Electrical services on site

TEMPORARY services like power, lighting and heating for construction sites are now being offered by Wysepower—the plant subsidiary of Bovis.

Open-reel to cassette duplicator

DESIGNED for mass production of professional quality tape cassettes from open-reel masters, the 235CS-1 is intended for use by educational, sales or industrial training organisations.

PROCESSES

### Furnace cuts cost of circuits

PROTOTYPE thick film production will now be within the financial reach of schools and laboratories, according to the manufacturer of a low-cost substrate furnace designed on entirely new lines.

COMPUTERS

### Chemical analysis program

COMPUTER assistance in dealing with the data from all kinds of chemical and metallurgical analysis is now gaining rapid acceptance, but it is also recognised that the associated software presents the most difficult part of the problem.

Reads 2,000 characters per second

AN OPTICAL character reader capable of reading 2,000 characters per second is the first product to be announced in the U.K. by Scan-Optics, of Shoppenhangers Road, Maidenhead.

Portable ATC tower

MOBILE air traffic control towers that can quickly convert an unattended air strip into a high-capacity military airfield are now being made available by RCA.

The system is equipped with simple controls for operation by non-technical personnel. All mechanical movements are solenoid controlled with operation from the master transport by momentary contact push buttons. Equalisation for various combinations of tape speeds can be pre-set by clearly identified controls. Photo-electric sensors allow for captive master tape operation. With six slaves, 84 C130 cassettes per hour can be produced.

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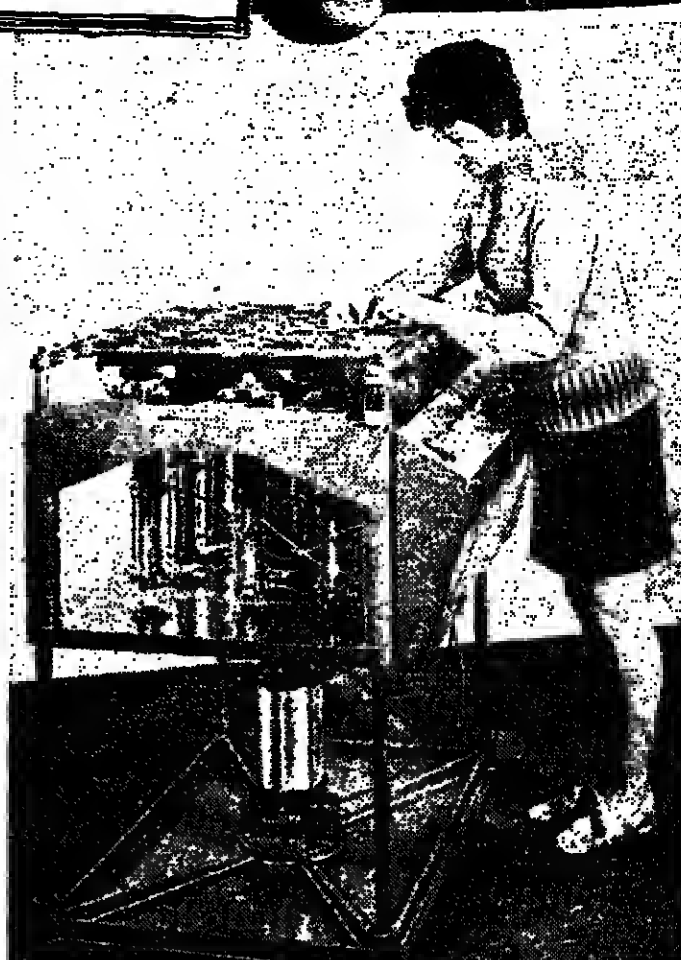
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This machine has been designed for buttoning completed cushions. It enables up to 40 buttons to be attached to a cushion in any pattern in a single operation. Cushions up to 36 by 24 inches in size can be dealt with at rates up to 55 an hour. The machine is pneumatically powered and controlled by equipment supplied by Emms and was developed by AV Lancashire in collaboration with Modine.

NAVIGATION

### Airborne satellite aerial

AN L-band high-gain phased-array antenna for use by aircraft communicating with air traffic control ground facilities via geostationary satellites has been designed and manufactured by British Aircraft Corporation of Filton.

Keeping on course

TWO inexpensive aircraft navigation/communication systems developed in the United States by Navco have now been put on the market by the Van Dusen Aircraft Supplies Company of Oxford Airport, Oxford.

Protective coating for tanks

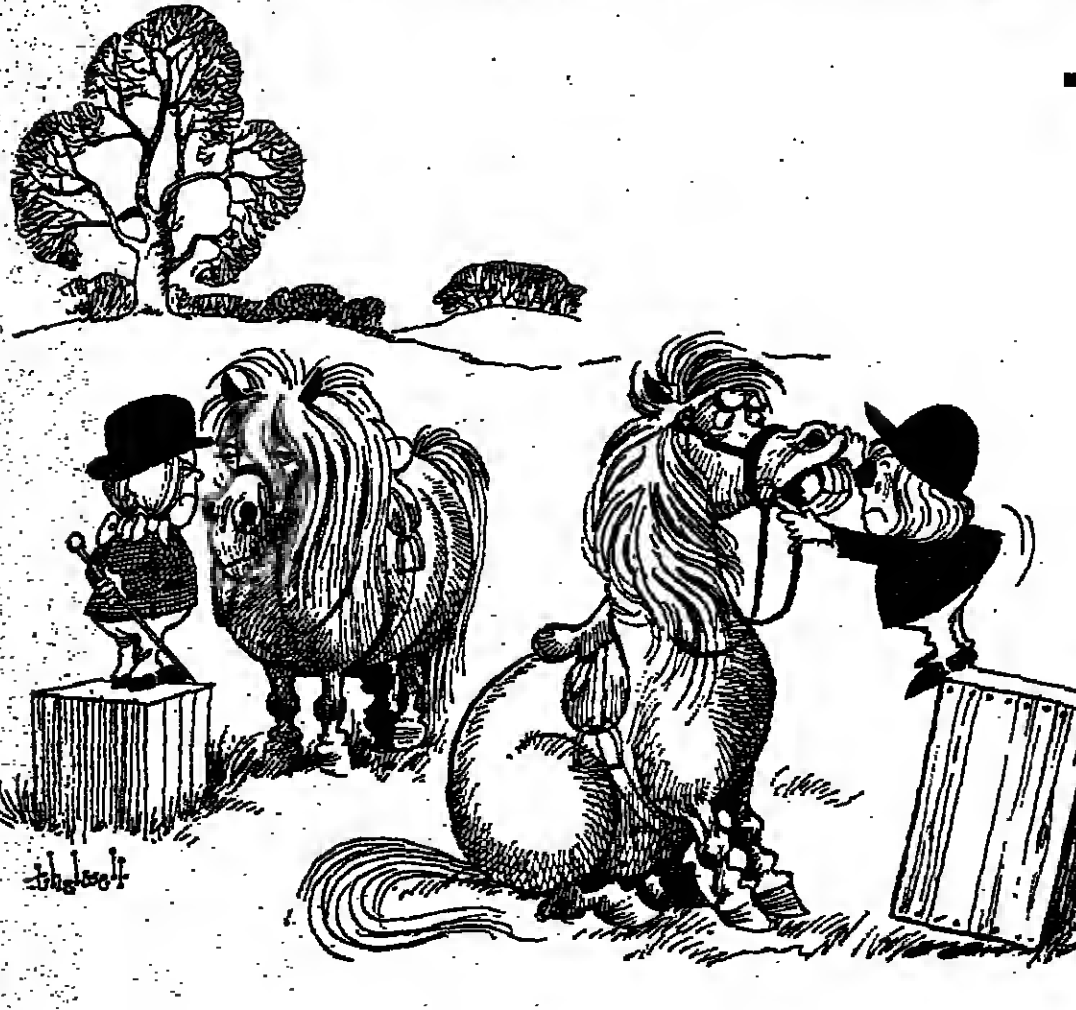
WHAT is claimed to be an economical material for the protective coating or sealing of tanks and containers has been introduced by Plastics and Resins of Wolverhampton. Called Polatank F.S., it is a two-pack liquid material applied in a single coat by brush or trowel after appropriate cleaning and priming.

## The difference is, National Vulcan go out of their way to help

Before you even look at plant, look at the Special Services facilities which National Vulcan offer. NV go out of their way to help — first, by carrying out a complete programme of inspection on your behalf, scrutinizing drawings, checking construction details and finally testing the plant before it goes into service. Nothing escapes our engineers: that's why the NV seal on a plant is recognised as an official stamp of serviceability, and why you can be sure your plant is as safe as Britain's most experienced engineering inspection group can make it.

Many companies commission us on a long term basis to do non-destructive testing. NV can save them days of production time usually lost in stripping down plant, by using ultrasonics and radiography to plot defects and wear and tear on plant. See how readily NV can help you by having a word with our local office.

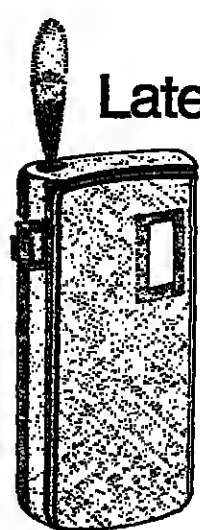
NATIONAL VULCAN ENGINEERING INSURANCE GROUP LTD.  
St. Mary's Parsonage, Manchester M60 9AP. Tel: 061-834 8124 (PBX)



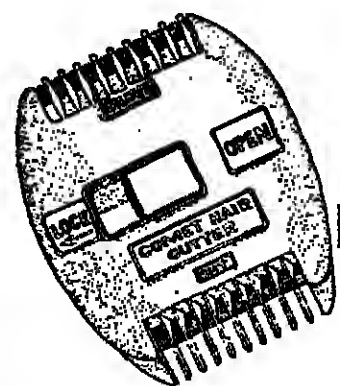
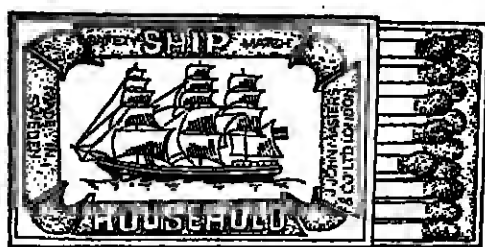


# Say the right things on Thames, and the right people will listen.

Thames Television puts you in touch with twelve million people.  
But you don't have to sell to them all to be successful.  
You can afford a little of what the unenlightened call wastage.

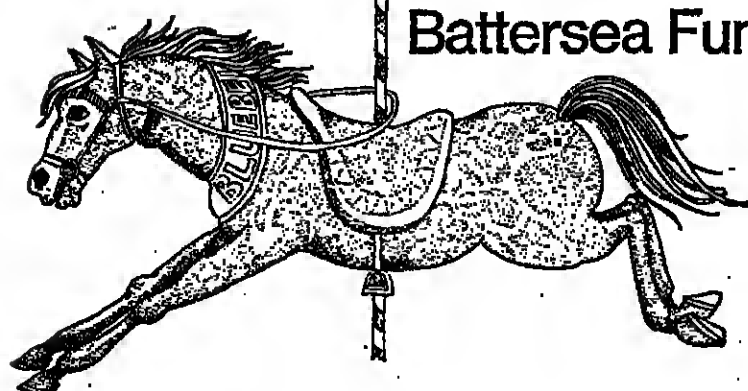


Lately on Thames we've  
been selling Ronson Lighters  
as well as Ship Matches.



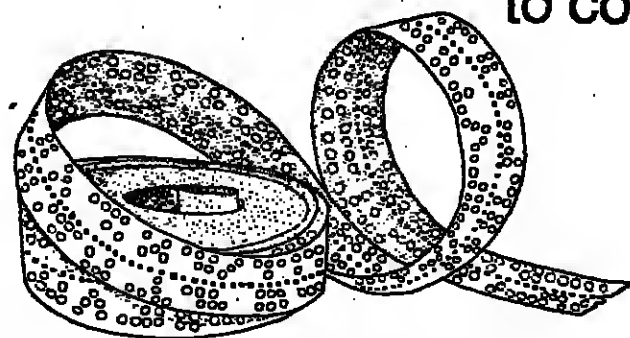
Luxury hair dryers as well  
as inexpensive home hair-cutters.

We've sent people  
to the St James's Antique Fair  
and  
Battersea Funfair.



We've sold them Coalite  
by the bag  
and central heating  
by the Gas Council.

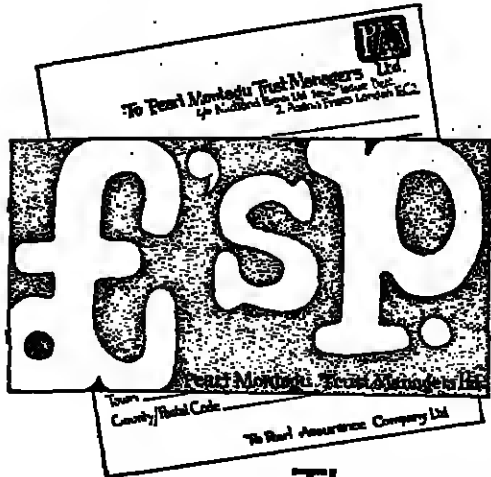
The one thing more important than the size of  
our audience is television's ability  
to communicate with all of them. (And economically.)  
Some of the campaigns on this page  
cost less than £1,000.)



We can recruit  
computer staff for Autonomics as well as drivers  
for London Transport.



We can interest people in  
Pearl Montagu Unit Trusts  
as well as  
Boots Gift Vouchers.



Thames covers 90% of the people in and around London —  
far more than any newspaper or magazine. So even if your market is a  
fraction of the population, you'll be sure of covering more of them  
on television.

If you'd like to know more  
about the cost-effectiveness of television,  
call George Cooper at Thames.



Thames Television, 306 Euston Road  
London NW1 3BB 01-367 9494

## Advertising and

### Sad reading for media

BY MICHAEL RYAN

THE NEW national readership survey covering the period July 1970-June 1971 was delivered to subscribers over the holiday weekend. Compared with the previous NRS, readership levels are generally lower—55 publications showed decreases against 40 increases.

Women's magazines are particularly badly hit—the mass-scale weeklies and almost all the monthlies are well down. On the other hand the general monthlies and male-oriented magazines tend to be up. This hints at other information to the effect that the combination of high levels of cost and wage inflation has tended to hit housewives but benefit their husbands.

Among national dailies several million-tones are passed. The Daily Mirror has fallen below 14 million readers and the Daily Express below 10 million, while the Guardian has exceeded one million for the first time. The Sun has shot up above 7 million. However most of the interviews were done before the relaunch of the Daily Mail and the survey gives no indication of how these two events have affected readership of other papers, nor who the readers of the new Mail are.

From January 1971, the NRS has included a series of questions on ownership of consumer durables. An estimated 1,648,800 adults (15 plus) are members of colour TV owning (or renting) households. Assuming 2.2 adults per colour TV household this

Readership Estimates for National Newspapers

Newspaper	Readership (millions)
Daily Mirror	13.2
Daily Express	10.0
Sun	7.2
Daily Telegraph	3.5
The Times	1.8
The Guardian	1.1
Financial Times	0.4
News of the World	0.3
People	0.2
Sunday Mirror	0.2
Sunday Express	0.2
Sunday Times	0.2
Observer	0.2
Sunday Telegraph	0.2

Source: JICNARS July 1970-June 1971.

means about 750,000 homes with colour TV in April, the midpoint of the fieldwork period. This well in line with manufacturer estimates.

No demographic breakdown are given in the report for colour TV. (They could be obtained by special analysis), but newspaper readership gives an indication of the sort of people who buy colour TV. Colour TV owners among readers of national dailies varies from 0.2 per cent. of readers of the Daily Mirror (Scotland only), and the Daily Sketch, through the Mirror and Sun (0.3 per cent.), the Guardian (0.4 per cent.), the Express (0.5 per cent.), the Daily Mail (0.8 per cent.) up to The Times and Daily Telegraph (0.9 per cent.) and Financial Times (1.4 per cent.).

### ITV revenue holding up

ITV's advertising revenue was up by just over £300,000 in July compared with the same month in 1969. According to the Independent TV Companies Association the net amount was nearly £6.5m, against just under £6.2m last year.

In recent years the July figure has been around £5.2m-£5.4m, so the increased level of revenue seen in the first half year seems to be keeping up. July is usually down on June, and this was true this year but last June's £5.2m was a record.

The figures are net ad. revenue after deduction of agency commissions and all discounts.

### Katie & Philip in £1m. move

BROOKE Bond, Oxo will be spending nearly £1m. to establish Katie and Philip, the pair, in America. In the eye of the public, that is. As Ant Thornicroft reported on July 1, the couple have been moving America for the latest TV campaign.

The switch allows for the heavy story to be re-presented. Advertising will begin on September 6 and run until April. The series consists of five second- and two 30-second commercials. J. Walter Thompson, the agency.

### Fighting drugs with ads.

BY PAMELA JUDGE

IN THE U.S. advertising will have to "tell it like it is" to a military. But in each case much greater degree than ever before, according to Compton but to get people thinking. Advertising Inc.'s president, Milt Gossett, the reasons for this include consumerism, concern for the environment, and women's lib. And there will be an increasing need for documentation of claims made by advertisers.

Gossett, New York born and 23 years a Compton man, is over in the U.K. for his "first extended visit." In the States Gossett is responsible for Compton's creative output. One of the agency's biggest projects has been the current anti-drugs campaign. This has been done through the Advertising Council at any stage of pre-campaign which is a public service organisation that runs national campaigns with the voluntary cooperation of agencies, advertisers, and media.

To date it is reckoned that some \$50m. worth of media space and time has been donated in the anti-drug cause. Among all the publicity is a Government booklet for parents and requests for this total some 800,000. And Gossett puts a \$750,000 tag on the amount of agency time spent. Compton's approach was to segment the market into pre-teenagers, students, parents, teenagers, and adults. But in each case idea was not to preach or to get people thinking. Advertising Inc.'s president, Milt Gossett, the reasons for this include consumerism, concern for the environment, and women's lib. And there will be an increasing need for documentation of claims made by advertisers.

### Agency News

● J. Walter Thompson now acts for Mateus Rose, the Portuguese wine. It is distributed in the U.K. by Bass Charrington Vintners which has decided to restrict the number of agencies with which it works. Another company centralising its accounts is British-American Cosmetics and it is placing its Lashers and Morry business with JWT from January 1.

● Seatchi and Seatchi has been appointed to handle the Carmen hair-roller and wig account, said to be worth £100,000 and formerly with Pemberton Seatchi already does the advertising for several Schick electrical products which are distributed in this country by Carmen.

● As a result of reorganisation in its marketing department Mars has reassigned some of its brands: Opals and Twix move to Hobson Bates from Masius Wyne-Williams which gets Tonic and Marathon in exchange. ● Seward Baker has won the National Milk Publicity Council's English cheese account.

● Glasgow wine and spirit merchant Thomson Stirling is Rex Stewart and Associates latest account. ● Draeger Normalair (breathing apparatus and gas detection) will be handled by Ross Woodroff from October 1.

### In brief

● Avalon Furniture: From Saturday for a month, to offer a 24-piece set of Oneida cutlery to customers buying a minimum of £125 worth of furniture. Press advertising in support is to begin on Sunday. ● Last week Tony Dakin suggested that the Birmingham Evening Mail was one of the newspapers that has resigned from ENAB. In fact, it is still a member but with certain minor exceptions does not take part for Mateus Rose, the Portuguese wine. The increase in ENAB cent billings from £68,500 in 1970 to £122,000 relate to the first six months of each year only. ● Heinz: Spending £200,000 TV this autumn in a drive to sell canned spaghetti sauce. It is better to do this now than later. The main part of the campaign carries no cost. It is just an arm nailed to a cross by a plastic dope syringe.

### The Visible Product

If you are the Marketing Director or the Marketing Controller responsible for any nationally advertised brand please write to the address below for your free copy of 'The Visible Product'.

Mitchell Murray Phelan  
140 Wandsworth Road, W8 7AD



# The Marketing Scene

You might think a large multi-national advertising agency offering a wide range of extra services carried all the advantages in gaining new clients. Not necessarily says research commissioned by Lintas and here reviewed by ANTONY THORNCROFT.

## An advertiser's guide to agencies

What do companies think of sending the clients' problems advertising agencies? Why do they far and away the most preferred reason for awarding the account to others and who makes the decision? These questions have a long way behind them. Always, fascinated advertising executives, who are constantly AI in all it seems rather pre-occupied with their own in-house, but there have been few serious research studies attempted with the aim of answering the questions. Just over a year ago, however, Lintas was moved to get together with research company MIL to try to establish some solid information on the agency's role in the business. The results were given in a paper delivered at the ESOMAR conference in Helsinki last week by Gerald de Groot of Lintas and Stan Orwell of MIL.

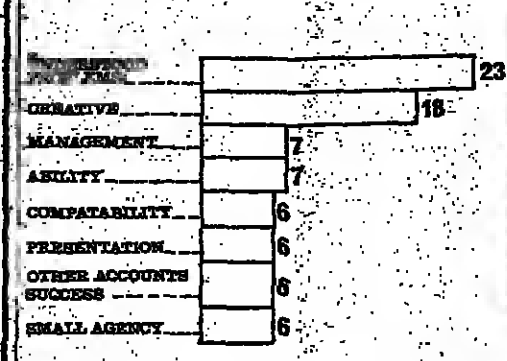
**Recent changes**  
In all, 185 leading advertisers were interviewed of whom nearly a third had changed their agency within the last three years. Over a half of those questioned spent more than £500,000 a year on advertising. The survey concentrated on those companies that had recently changed agency. It produced the following picture of the reasons why Lintas is keeping to itself.

In the majority of cases a short list of potential agencies was drawn up which usually contained four or five agencies who were interviewed on their own premises. Before short listing an agency it was usual to visit it, and the most important factors in deciding whether to ask them for a presentation were given as the agency's creativity, its experience, the absence of account conflicts, its reputation, size, international links, and management. In that order. Of over 100 agencies visited, the fact that the agencies visited were already known to the advertiser. No attempt was made to seek out unknown agencies. When it came to the actual selection the factors were similar to those which motivated short listing the agencies. But under-

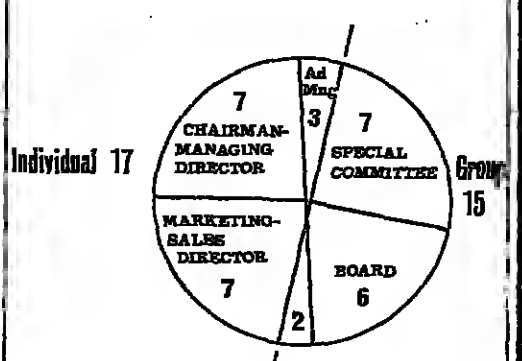
standing the people actually producing the ads. Least important of all were the agency's ability to produce new products; its access to below the line facilities; its international connections; and its experience in the advertiser's field.

These findings are perhaps the most interesting. Agencies apparently do not need to provide a wide range of services, or

### Reasons for Appointment of an Agency



### Who Had the Final Say



international links, or know the market, or be large. Indeed, while 37 per cent of those advertisers interviewed considered a fairly large agency (in the £5m-£9m class) appropriate for their business and 27 per cent preferred an agency billing between £3m-£5m, only 20 per cent preferred an agency of over £10m. Although the expenditure was over £500,000 the larger agencies had the edge.

It also appears that companies still like presentations. But these should be related at least in part to the company's problems and not just a general sell for the agency. All in all there was enough of the unexpected in the investigation to make agencies think. The weakness was perhaps the loose use of a vague word—creativity. When advertisers say they are impressed by a particular agency's "creativity" are they not just really saying that they like that agency?

To spice things up the research concluded with questions about the attitude of advertisers towards particular agencies. Lintas now has in its files the images of 11 other top agencies along with its own. This data is, of course, kept locked away, but Gerald de Groot is considering requests from other agencies to have a look. For public consumption Lintas is only releasing a scale of 11 unidentified agencies as they are rated by advertisers for particular skills. The top agency, presum-

## NEW PRODUCT DEVELOPMENTS

# The ginger flavoured crisp show

BY ANTONY THORNCROFT, MARKETING EDITOR

IT IS difficult to get through a day without eating something produced by T. Lucas of Bristol or its associate company Spice and Flavour Services which is hidden away in deep country somewhere, near Cirencester. Take a crisp and they probably supplied the flavour, munch a fish finger and it is covered in their processed crumbs, the majority of the sausages which are packed with their risk and, more to the point, their seasoning.

Pies, sauces, curried meats, even desserts stand a good chance of containing spices or blends developed at Bristol. And even if you eat steak at an expensive restaurant there is no guarantee these days that a technicist has not been injected into the meat and Spice and Flavour produce a great deal of tenderising powder. Not surprisingly the two companies are the most profitable in relation to turnover in the Spillers group—which acquired Lucas in 1949 mainly as an outlet for its flour in risk making.

And the two are perhaps the most confident about the future. Forecasts about the food industry tend to be so predictable that they have become boring. Only last week Mr. Alex Alexander, who heads the IMPS food

jects. One reason, which mainly led to the formation of S & F is that certain processes, especially the refining of peppers are best carried out in the country. Another reason is that the confusing number of companies (for there are even more subsidiaries, in name at least) makes it easier to deal with customers who are often in the same field. Lucas has, in all, 15,000 customers ranging from Unilever

a bespoke service. We will make flavours to order. It seems that consumers are developing stronger palates. A burger that Lucas was working on recently had to be spiced up with extra onion. Moriarty is also excited by the future for crumbs. In the U.S. burgers are crumbed—they could be here. Lucas already holds over a half of the £1m-plus broad crumb market, with a specialist factory sited near the North Sea fish processing industry. Now with crumbed burgers are crumbed—they supplement fish fingers Moriarty sees considerable new demand for this new and more profitable use of Spillers flour.

But the company cannot afford to wait on national trends. Flavouring is now a very competitive business with American companies invading the market. Recently Lucas has become more entrepreneurial. It has produced a recipe for a honey roasted sausage and it is even backing Miss Honey Roaster to tour the sausage manufacturers and sell them the idea. It is also keeping alive the Black Pudding by producing a mix for northern hutchers who might otherwise forsake the dish.

Of much greater significance however is the company's decision to enter the retail field on its own account. This month its sales force will attempt to sell to butchers a Lucas range of accessories for meat dishes, along with the gut and risk for sausages. It will be marketed under the Conquest brand name and includes a sage and onion mix, a yorkshire pudding mix and a gravy among the initial items. Moriarty feels that butchers have been left behind by the supermarkets as outlets for these products and he hanks on Lucas's traditional links with retail hutchers to gain distribution. If it takes off cash and carries will probably be the next target.

The difficulty is that a company in a service industry can never slacken up. Flavours date rapidly. Hence the costly research into vegetable proteins. The company needs the success, the new commissions, to finance the experimental work. And there is always the danger that it will become so committed to a new idea that it will gobble up more than its fair share of resources. But with the undoubted growth in the demand for new flavours, this necessarily secretive company should continue to be one of the hottest performers in the Spillers group.

Maurice Moriarty—supplier to the trade

There are, of course, delicate marketing problems involved here. Sometimes S & F thinks it is on to a good taste and sends it along to the manufacturers for a decision. Sometimes the companies ask for flavours to be developed. But what if one company wants a flavour which has been commissioned a few months earlier by its competitor? And what if more than one company wants to market the same S & F produced blend? Well, the company rarely gives exclusivity of supply to any of its customers and if two companies are interested in the same flavour the second to apply usually finds it has to wait a few months for the seasoning (which is added in the ratio of 5:100 to the crisps) to become available.

The buildings at S & F are scattered around the countryside in a rather mysterious fashion, but the Lucas factory in Bristol the spread experience in blending flavours has knowledge about the future for foods which no manufacturing company can ignore. As yet no company dares to

## BKT

for the best in print

All forms of print for shipping, including colour brochures, time-tables, deck plans, menus, and port notes.

**BROWN KNIGHT & TRUSCOTT LTD.**  
Printers & Publishers  
11-12 Bury Street, St. Mary Axe,  
London, EC2A 4AP. Tel: 01-568 5477.

## Captive ladies for ads.

BY SHEILA BLACK

WHAT more captive audience could there be than half a million women all trapped under the hair-dryer? None, according to a couple of young French film producers who are installing in-salon cassette entertainment in 350 hairdressing salons, serving 500,000 women throughout France from next month.

Their features editor is Jeanne Moreau, whose first 80-minute

## It pays to invest with Southern

The Southerner is affluent. And he's part of a rapidly expanding market. By 1981, according to the Registrar General's Estimates, there will be an extra 700,000 shoppers in the Southern Television Region bringing the total to over 5½ million.

Look at the map and the growth centres in Bournemouth, Poole, South Hampshire, Basingstoke, Ashford, Maidstone, Eastbourne and Hastings. All of them are in the Southern Area. Southern Television has the key to this thriving, growing and spending market. Fifth biggest in the country.

The key is knowledge. Economic, geographic and household data. All available from Southern Television. Our Marketing Services can help you build a bigger share of a market on the move.

**SOUTHERN**  
INDEPENDENT TELEVISION

For further information call John Miall, Sales Director, Southern Television. Tel: 01-834 4404. Southern Television Limited, Glen House, Stag Place, London SW11

## Towns for test marketing

YORK • DARLINGTON  
OXFORD • BRADFORD  
SWINDON • BARROW  
SOUTH SHIELDS • BATH

Each town has a high penetration daily newspaper with full colour facilities. Test your new product. Try out a new campaign. Measure the impact full colour advertising can give you in these test towns. Contact Peter Clifford on 01-353 1030.

**Westminster Press**  
Newspaper House, London, EC4

## Your selling career—at a successful standstill?

Why aren't you getting on as far and as fast as you could?

Perhaps you've already achieved everything in your field. Perhaps the industry you're in isn't growing quickly enough. Perhaps you're being held back by an ordinary product or over-cautious management.

Maybe it's a combination of factors—with the result that you're too good for your job.

We'd like to give you the chance to make some real progress in the industry which by 1980 will be one of the world's biggest, and which is already a top money earner for salesmen.

We shall pay you at least the same salary in your first year as you're earning now. Later you'll be on a great deal more.

We'll give you the necessary computer training, and provide you with the benefit of all our experience in the applications of computers to business. If there are any gaps in your understanding of commerce we'll give you whatever insight you require.

Then as manager of your own ICL territory (but always able to call on specialist technical expertise) you'll sell data processing systems at top-management level.

This is where you will need every ounce of your business acumen, plus a high level of creativity. Your product isn't a product in the normal sense. You're selling the benefits that a whole, custom-designed computer configuration can bring to clients' business. You identify a client's needs, and provide the means to meet them.

Naturally, for a job like this, our selection standards are very high. But we sell business efficiency, so we believe in prompt action—like a quick, firm offer—when we meet a salesman who is obviously going to make it.

For an application form, send your name and address (with ref. 178U on the envelope) to: R. P. Peck, International Computers Limited, Bridge House South, Putney Bridge, London SW6.

Or use the automatic answering service on 01-788 0640.

**International Computers ICL**



## THE FINANCIAL TIMES

Incorporating THE FINANCIAL NEWS  
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Telex: 886341/2, 883897

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THURSDAY SEPTEMBER 2 1971

# West Germany: tests to come for the economic superno

By MALCOLM RUTHERFORD, Bonn Correspondent, Sept. 1

## Slow response to reflation

THE NATIONAL Institute of Economic and Social Research concludes its latest economic assessment with the view that the Government has probably now done enough to bring about a general recovery in the economy, but it is still unhappy at certain aspects of the present situation. This is mainly because successive reflationary measures have in the Institute's view been either too small or taken too late. As a result, business confidence has been sapped and investment has turned down—in other words, a stop bad already occurred.

## Investment lag

It may therefore be some time before economic recovery leads to a substantial upturn in investment. The Institute welcomes the strategy underlying the July package—a fast-acting stimulus to consumption, accompanied by investment incentives which are subject to a time limit—and its forecast of a 4 per cent. rise in gross domestic product between the first half of 1971 and the first half of 1972 is broadly similar to the official estimate. But because the present degree of slack in the economy is greater than in any previous post-war recession, the upturn in investment may lag some considerable way behind the upturn in demand. Indeed, the Institute believes that the main investment response could well be delayed until 1973, although it acknowledges that uncertainty over the possible effects of EEG entry and of the latest world currency developments makes forecasting more than usually hazardous at this stage. In view of this and the present low level of capacity utilisation in industry, the Institute sees little likelihood of any significant reversal of this year's increase in unemployment before the end of 1972.

The Engineering Employers' Federation, which largely draws its membership from the plant and machinery makers, takes much the same view. The Federation's latest annual

## Arab federation against Israel

ALL THAT can be certain about the Federation of Arab Republics is that the people of Egypt, Libya and Syria will give a massive vote of approval in the referendum being held this week to approve the union. In recent weeks President Sadat, Colonel Khedafi and President Assad have all delivered speeches designed to whip up support for the Federation. However, the inevitable majority vote in favour will not necessarily reflect any real grassroots enthusiasm for the union as a practical political measure. As a democratic exercise, this consultation of the electorate by three essentially military regimes will be no different from the popular endorsement given last year in well-organised referenda to President Sadat and President Assad on their accession to power.

In Egypt there has been plenty of evidence since the death of President Nasser of a widespread feeling that national interest should be given precedence over pan-Arab principle in deciding policy. President Nasser's aspirations to lead the Arab world were popular enough so long as they were successful in practice, but the Yemeni adventure and the disastrous brinkmanship which led to the June War of 1967 are now seen by many Egyptians to have been mistakes. It is significant, for instance, that Vice-President Ali Sabri chose the issue of federation to create trouble in the Arab Socialist Union when he embarked on the power struggle against President Sadat in the spring.

## Not easy

Colonel Khedafi of Libya is now the most vociferous proponent of Arab unity and has himself taken upon himself the mantle which President Nasser once wore. There is little sign, however, that the Libyan people have any genuine wish to integrate with other Arab countries, let alone share their oil wealth, and to most observers they appear almost as xenophobic towards other Arabs as they are towards Europeans. Probably the feeling for Arab unity is most authentic in Syria, but even here the continued

THE more one looks at the prospects for the West German economy, at any contribution which the Germans might make towards a new international monetary system, or indeed at West German policies generally, the more it comes back to one man: Dr. Karl Augustin Schiller.

Dr. Schiller seems to have powers over the German Cabinet unrivalled since Konrad Adenauer—and Adenauer was Chancellor. Dr. Schiller is Economics Minister, and since the resignation of Herr Alex Moeller last May, also Finance Minister; in other words, he is economic superno in a country where the conduct of economic policy is perhaps regarded as the paramount political issue.

## Guiding the Bundesbank

At present Dr. Schiller is playing the leading role in preparing the 1972 budget and the 1972-75 medium-term economic plans, itself a crucial exercise if the Government is to achieve its promises of domestic reform, almost inevitably lead to serious overheating by 1973 and thus to another stop. But a general policy of wait and see need not preclude action in specific areas, and, as the National Institute itself suggests, one of the priorities now ought to be the unemployment problems of the worst-hit regions.

The Government has already announced some additional measures. But the trouble is that, while for example an increased public works programme may be of assistance in some localities, few measures are likely to be quick-acting. However, unemployment is now a major problem in many areas. Whereas the national proportion of the registered male labour force without work has reached 5 per cent. in Wales and the North West it exceeds 6 per cent. in Scotland and is over 8 per cent. in the North over nine, and in Northern Ireland—admittedly a special case—it is above 10 per cent. Moreover, some of these figures could well become a good deal worse. The situation at UGS is one obvious danger point. Even if little can be done about this immediately, a comprehensive look at regional policies might help to alleviate the situation in future years.

There is every reason to assume that Dr. Schiller is willingly allowed these powers by the Chancellor. Indeed it is hard to escape the belief that the Government as a whole came to the conclusion some time ago that its only chance of winning the next elections in 1973 was by relying on Schiller to produce some kind of miracle of economic management.

That time was probably Sunday, April 25, when the Social Democrats fared surprisingly badly in the State elections in Schleswig-Holstein. The elections coincided with the annual visit to Germany of a team from the IMF, which although it could not say so publicly, came to precisely the same conclusions. Henceforth, the German Government would give absolute priority to restoring price stability (the annual rate of inflation having risen to around 5 per cent.). Where necessary, the team concluded, the Germans would no longer have much hesitation in "putting German interests first." It was just this phrase which was

reform from the last week of April onwards seemed designed to prevent an enormous rush into D-Marks—indeed, the speeches might almost be said to have been intended to encourage it, and there is no doubt whatsoever that this is what they did.

Certainly this was the opinion of the high-level members of the U.S. Administration, Federal Reserve and IMF who gathered in Munich for the international banking conference shortly after the float. Nearly all the American talk was of irresponsible German monetary nationalism. Mr. Connolly, the U.S. Secretary of the Treasury, demanded that Germany obey the rules of the

game. Others suggested that the only German in this field, who could be trusted was Dr. Klagen, who had opposed the floating as far as he could.

To be sure, Dr. Schiller and his colleagues had tried to take the rest of the Common Market along with them. They had been as adamant as anyone in the Community in their support for the idea of economic and monetary union, but it was union on Schiller's terms, under which the Germans insisted that other countries must bring their rates of inflation down to the German level. Otherwise, Germany would be in the old position of importing inflation from abroad and recurrently obliged to revalue.

In the circumstances, it is difficult to avoid the conclusion that Dr. Schiller was willing to provoke a crisis in order to free Germany from its obligation to support the dollar at its official D-Mark floor. Nothing in his speeches calling for monetary

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cent. above parity, whereas the intended effect was only 5-6 per cent. to act as a temporary curb on German exports, which had again been rising too fast. The present de facto rate of revaluation, however, is admitted by all concerned to pose the danger that some German firms may be priced out of export markets altogether.

Secondly, the Germans have failed to convince the Common Market, or more particularly, France. Dr. Schiller wants—as he has done for months—a collective float of Common Market currencies against the dollar, coupled with a narrowing of their margins of fluctuation against each other. He

Ministry, seems to have brought back much the same message from his talks in Paris on Monday. However long the two sides talk the same basic difference remains: the French insist the D-Mark must return to a fixed parity, and the Germans insist on the collective float.

Thus, German thoughts seem to be turning less to the next meeting of the EEG Finance Ministers on September 13 than to the meeting of the Group of Ten which follows (and for which there is a rehearsal at the deputy level in Paris on Friday). And it is here that one returns to the political power of Dr. Schiller. What if, failing to agree with France, Germany

here at least some of his objectives have been achieved. He has bounced back to prominence in a way that would have seemed unthinkable just six months ago. He has stopped the inflow of dollars. He has shown that the Germans can stand up for their own interests when necessary.

(Oddly enough, the one German politician of note to have argued in public that there might be something to be said for the French system of two-tier exchange rates, at least if the alternative was a major Franco-German row, is Herr Franz Josef Strauss, generally thought of as the arch nationalist. He has received short shrift even from his own party which, like the Conservative Press, has shown a certain grudging admiration for Schiller's stand.) And as other countries have followed the floating fashion, Dr. Schiller is entitled to argue that although the D-Mark revaluation rate may be 7 or 8 per cent. against the dollar, it is rather less against currencies like the yen or the pound.

There remains the budget now in its final stage of preparation, and the general management of the domestic economy. On the first he seems to be managing at least without provoking the resignations of some of the highest-speeding Ministers. The budget will be about 8 per cent. up on the current year. But the record in the wider economic field is more questionable, with, as yet, no noticeable let-up in the rate of inflation. But on both Schiller has an impressive array of weapons at his disposal.

The prime aim

There is a little matter of nearly DM6,000m. (equivalent to about 6 per cent. of the current budget) frozen in the Bundesbank as a result of the repayable surcharge on income and corporation tax. Repayment can begin any time the economy needs priming and must be virtually complete by the time of the 1973 elections. It is not a bad nest-egg and may even be used as a substitute for high wage increases. There is also nearly another DM3,000m. frozen from the current Länder and Federal budgets which can be released.

In all probability, both these funds will be mobilised as the German economy turns down. The objective of their creation was stable growth, the post-war German economic aim par excellence. It is just possible that Dr. Schiller, who has sided with the Germans against the French, in spite of the new found understanding with Paris, Nor perhaps would Dr. Schiller seek to push it. His feet are as the man who unleashed the firmly in Germany and his monetary crisis, and was then unable to solve it.

Centre, Dr. Karl Schiller, Economics and Finance Minister. Left to right, clockwise: Helmut Schmidt, Defence Minister; Willy Brandt, Foreign Minister; Chancellor Willy Brandt; Ottmar Emminger, vice-president of the Bundesbank; Karl Klagen, president of the Bundesbank.



Scheel, Foreign Minister; Chancellor Willy Brandt; Ottmar Emminger, vice-president of the Bundesbank; Karl Klagen, president of the Bundesbank.



## An eye to re-election

Yet when the Americans finally responded with President Nixon's measures last month their action was the mirror image of what the Germans had done first. As a result, two of the most economically powerful governments in the world are now pursuing policies of economic and monetary nationalism in the apparent hope of securing their re-election.

Obviously, for the Germans, something misfired. In the first place, the D-Mark floated too high. In the last few weeks it has been at between 7-8 per

could agree on monetary reform with the rest of the Group of Ten? France has no veto in this assembly, no veto in the IMF. In theory, the rest of the Group could agree, leaving the French to their own devices. But could the Germans go that far, and even if Dr. Schiller wanted to, could Herr Brandt allow him to proceed with what would be the biggest Franco-German rift for years and one that could do untold damage to the Common Market? The question is entirely speculative, but there is no doubt that it is passing through many German minds.

In the event, of course, a nine-against-one division seems unlikely to arise. Involving as it would a British decision to side with the Germans against the French, in spite of the new found understanding with Paris, Nor perhaps would Dr. Schiller seek to push it. His feet are as the man who unleashed the firmly in Germany and his monetary crisis, and was then unable to solve it.

Dr. Schoellhorn, the State Secretary at the Economics

## MEN AND MATTERS

### The starlings are no darlings

The attack on the starlings of Bradford begins at dusk tonight. Just after the birds have come back to roost on the city's buildings from their feeding grounds outside the city. Mr. Frank Haddock and a team of a dozen men will go into the attack with a battery of flashing searchlights mounted on 5 trucks. The first night's operation is expected to dislodge about 4m. starlings. Totally clearing the city is expected to take up to 14 nights, although Haddock's contract, as general manager of the Glasgow firm of Scot-Trust Industrial Services, is to keep the city's centre clear for 6 months, for a fee of £6,000.

The company was originally in the business of stone cleaning. But in Glasgow, where the railway station roofs were once a mass of birds, stone cleaning was mainly because of the birds. So Scot-Trust got into what Haddock calls "bird repellent systems" for individual buildings.

Some of these are nets. Another firm uses a jelly. One patented by Scot-Trust is like a string of beads stretched across the window sill, so that birds try to settle on it but cannot get a secure foothold. So after several attempts they go away. Then Scot-Trust is a subsidiary of the Scot-Trust Group) tried out its searchlight method to clear the city in general. Haddock tells me that there are now no starlings left in central Glasgow. "The method only works with starlings. But they are the main problem." The searchlights are 12-inch diameter, like those on

top of fire-engines, and the flashing light unsettles the birds and apparently, once unsettled, they don't come back. The company has done several works to the starlings on there for warmth and comfort, then bomb the product" but Bradford is its first city contract outside Glasgow. In both cities, the initiative came from the Medical Officer of Health, worried about bird droppings breeding insects and forming starting committees to organise action. At the Mechanics' Institute in Bradford, the droppings are several inches thick in places. Haddock expects to go for other city contracts if Bradford is a success. But where do all the starlings go? "That I just don't know."

### Nigerian set free

The internationally known economist Dr. Pius Okigbo, one of the most prominent spokesmen for Biafra during the civil war and the man who led Nigeria's negotiations with the EEC in the mid-1960s, has been released from detention in Lagos. Okigbo, a trim, softly-spoken 40 in his late forties, stayed behind in Nigeria when Biafra collapsed 20 months ago, and for a while lived peacefully in his own house in a once-smart suburb of Enugu. He was arrested by police in Enugu, questioned, and finally sent to Lagos, where he languished. It was widely rumoured, in Kiri Kiri prison. The Nigerian playwright, Wole Soyinka, was at one stage also imprisoned there.

No charges were laid against Okigbo. His arrest was never officially confirmed and his release has come equally unheralded in Lagos. But it will

come as a relief to people who feared that the victorious Nigerians would take vengeance on prominent Biafrans. As far as is known, only a few army officers remain in jail. The tribunal promised by the Head of State, General Gowon, to look into the activities of men like Okigbo, has never been established and presumably never will be. Okigbo himself is now said to be back in Enugu, with all accounts in good spirits and about to go into business.

### Who'll sponsor the Junior Chamber?

The London Junior Chamber of Commerce is desperately looking for a sponsor to help it complete its campaign to attract the International Junior Chamber Congress to London in 1973. So far the members of the London Chamber have spent some £2,300 on promoting the merits of London to people as far away as the Argentine and Japan. Most of the money has gone on preparing a 70-page document outlining the possible meeting places and agenda of such a conference, while the rest has gone on "generally waving the British flag" at other International Chamber meetings.

These efforts have narrowed down the opposition from six other towns around the world to one—Nice. But now the campaign is threatened by lack of funds. To win the crown for London, at least two representatives must fly to this year's conference in Honolulu and formally present the charms of London to the assembled delegates. "If we can't go, we are lost," says Dan Daly, president of the London Junior Chamber, "and we will have wasted all the money we have spent."

Another opportunity will not arise until 1984, as all the intervening years have already been held for by other eager cities. Until two years ago the London Junior Chamber considered London's hotel accommodation to be inadequate to house the influx of 2,000 to 4,000 delegates. But now, with hotels going up all the time, and an undertaking from the London Hilton that it would be prepared to give over its entire conference facilities—it would be the first time they had been taken by one organisation—the London members feel the time is right.

Already, several institutions like the Stock Exchange have said they would be happy to consider sponsoring events, if the Congress can be persuaded to come to London. But so far, despite many requests, nobody has been prepared to foot the £5,000 bill to sponsor the delegates' presentation in Honolulu.

### Dog eats dog?

I see that bus and tram men in Blackpool are to stage a one-day strike on Saturday in protest against the Corporation's refusal to increase bonus payments. The timing of the strike is no doubt influenced by the fact that Saturday is the first week-end of the Blackpool illuminations. But what is more to the point, it is also in effect the first day of the TUG conference being held there, with all the delegates and union officials arriving. I wonder what the delegates from Transport and General Workers Union, to which the busmen presumably belong, will think of their brotherly welcome in Blackpool.

Observer

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ECONOMIC VIEWPOINT

# Real and bogus costs of EEC entry

WITH THE party conference plausible than it would have been approaching the EEC done as little as a few months ago. But even should govern. It may nevertheless be felt that the public is so saturated with change rates reassert itself, it estimates of the effects of membership will be important to put the debate on a more realistic basis. The discussion is unusually interesting in that it is in terms of the eventual impact of 1980 and is not concerned with the details of the transition.

An attempt by Mr. Miller to put all the existing estimates on to a common basis, published in the August issue of the National Institute Review, qualifies under this heading. Mr. Miller has had to translate the balance of payments figures, on which official discussion has so far concentrated, into more meaningful estimates on effects on the real national income.

## Misleading

This is particularly valuable because, balance of payments figures are not some kind of transcendental obstacle to joining the EEC, but simply a misleading way of listing some of the adverse effects which are not different in kind from the non-derivable increased price of the dollar, it is a slightly exaggerated estimate of some costs, and creates yet more out of thin air.

More important than the particular figures are the tools provided in Mr. Miller's article for approaching many problems of the so-called "foreign exchange" burdens.

It is fundamental to Mr. Miller's calculations that exchange rates should be necessary floating, but adjusted with sufficient frequency to maintain the balance of payments in equilibrium without resort to the devaluation of output and employment. This now seems more

## How to convert balance of payments effects into real income costs

	£m. per annum at 1969 prices	
Payments cost implicit in 1971 White Paper		Real income costs
1. Deterioration in manufacturing trade balance	—	—
2. Import saving on food (volume)*	—140	—47
3. Rise in price of limited food	190	238
4. Payment of levies, etc., to EEC	80	100
5. Customs payments to EEC	240	300
6. VAT contribution to EEC Budget	75	94
7. Receipts from EEC expenditures*	—100	—125
8. TOTAL COST	345	560

\*Minus sign indicates benefits, as table measures costs.  
N.B. Balance of payments effects required for this conversion must be direct impact only and exclude all elements of "wage price spiral".

on the terms of trade is expected to add an extra 25 per cent. to the cost of the transfer items. Hence the "multiply by 5/4" in the corresponding section of the table. This 25 per cent. is based on the responses to devaluation and price changes implicit in the 1971 White Paper. These are very similar to those which became apparent after the 1967 devaluation and which are generally assumed in international trade studies.

The first two items in the table are the most frequent sources of misunderstanding to those who have been brought up in exclusively balance of payments terms. These two items

pay. But, of course, in order to cure the deficit, exports would have to be increased, or import savings found elsewhere. Others things being equal, this would involve a devaluation or not revaluing when we otherwise might.

Thus the £200m. gain would be wiped out; and in addition there would be an adverse shift in the terms of trade. This adverse shift would be the only real cost arising from the initial trade balance deterioration.

The terms of trade loss would amount to only a fraction of the initial payments deterioration—about 33 per cent. on the assumption already mentioned about international responsiveness to price changes. Hence the "multiply by 5/4" in this section of the table.

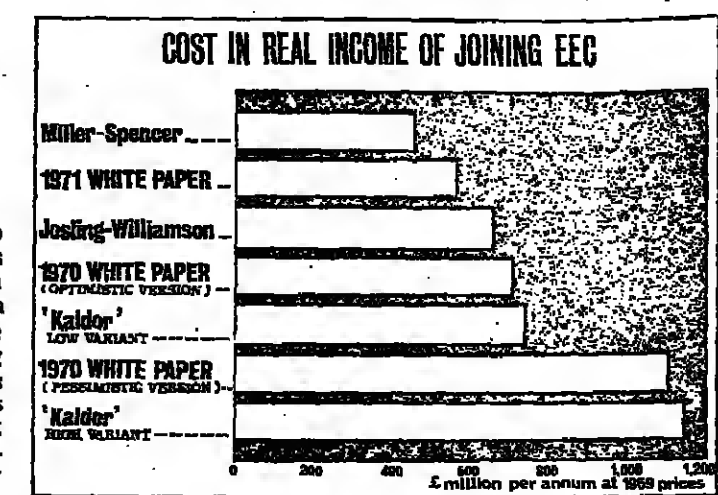
The key point in all this is that the crude balance of payments arithmetic slightly understates the real cost of the required payments from this country to the Community, but much exaggerates the effects of trade balance changes arising from the operations of the customs union.

There is a political moral in all this. For Mr. Harold Wilson has made great play of a £200m. £300m. deterioration in the industrial trade balance, which he maintains was in the original official briefing, but was excluded from the 1971 White Paper. To the extent that such a deterioration reflects the impact effect of the tariff changes, it would have to be divided by three to give the real costs in national income terms. But the greater part for any such estimate probably reflected in the price-wage spiral effect, for which the real income cost is zero.

## Price spiral

In all these computations, only the direct balance of payments effects have been taken into account. No account has been taken of the alleged price-wage spiral, which could result from higher food prices leading to higher wage settlements and thus pushing up British costs. The 1971 White Paper makes no allowance for any such spiral; but it is built into both the 1970 White Paper and the Kaldor estimates; and Miller doubts them both to remove this effect.

He is right to do this. For a price-wage spiral, however undesirable, is not a direct cost



industrial structure or psychological attitudes.

The academic calculations suggest, however, that these purely static gains are very small compared with the costs already discussed. The official estimate also takes no account of the diversion of resources into domestic agriculture because of the EEC's high level of agricultural prices. This is a source of loss and not gain. The marginal reduction of food consumption and switch towards less expensive products, resulting from the new price pattern, is also a source of loss, not taken into account in any balance of payments presentation.

Looking at the whole range of cost estimates, the feature that stands out is that the earlier ones are a good deal higher than the later ones. The most important single source of difference is the assumption made about the gap between EEC food prices and world levels. In early 1970 a gap of around 25 per cent. was normally taken, while the 1971 estimates have tended to narrow the gap to about 15 per cent. Anti-EEC economists tend to assert that the narrowing of this gap reflects temporary shortages in world markets; the pro-EEC school believes that it is more fundamental, and that it will be very difficult for EEC farmers to get their guaranteed prices raised enough in an inflationary world to prevent this

differential from narrowing further.

But much the most difficult question to decide is how heavy the burden of costs, anywhere in the range shown in the diagram, really is. Mr. Miller compares it with a projected level of the GNP in 1980 of about £50,000m., measured in 1980 prices. This gives a range of from just under 1 to just over 2 per cent.; and there are technical reasons for suggesting that these percentages have a slight upwards bias. If one takes 1.4 per cent. as a typical figure, more pessimistic than the most recent estimates, we should be losing an additional 0.2 per cent. of the GNP every year over a seven-year period until the total loss flattens out at 1.4 per cent.

## 'Insurance'

There is no entirely objective way of saying whether this cost is high or low. The dynamic benefits about which economists can do little more than guess, could be very much greater. On the other hand they are very much a gamble. At least as much weight should be attached to the "insurance" argument which sees EEC membership as a way of minimising the damage from any possible U.S. or world-wide retreat into protectionism. The insurance premium does not seem to me inordinately expensive after all that has happened in the last few weeks.

## The prime aim

is a little more than 6 per cent. of the budget; from a bank as a result of a decrease on an average any time in the 1970s. The prime aim is to get the budget back to normal. The prime aim is to get the budget back to normal. The prime aim is to get the budget back to normal.

## Labour News

### First sign of break in Lucas strike

BY PETER CARTWRIGHT, MIDLANDS CORRESPONDENT

FIRST SIGN of a break in the deliberately been exercising restraint in not sending people home or laying them off because of the overtime ban and non-operation.

"But this cannot go on for much longer," a spokesman warned. "The sheer economic strain is getting too much for us. The serious state of affairs that has arisen is not in the interests of the workers or the city."

Workers elsewhere determine their rates by plant bargaining and no one is going to lose by the termination of the agreement. We believe that it is far better to talk about an outright on organised labour.

"What is happening and seems likely to happen can only harm the future prospects of employment in Coventry."

The agreement has been a guideline for both the 80-ones federated engineering companies and also non-federated some of which have been thrown into some confusion by the cancellation.

The union has said it is determined not to negotiate at plant level and may introduce its own rate determination system.

It remains convinced that the agreement removed many areas of conflict with employers and is set against a return to workers with comparable skills being paid different rates.

At the same time, it does not wish rates to be frozen at their present level of just over £1 an hour, so the attitude to plant bargaining may soften.

It also maintains that some companies have said they had no voice in the termination of the agreement and are prepared to pay according to the principles of the tool-room agreement.

## Back to normal

British Leyland's Austin-Morris car plant at Birmingham is getting back to normal after a strike by 26 engine dispatchers that halted Mini output and caused more than 6,000 other AM workers in Birmingham and at the Swindon body plant to be stood off.

At Swindon, however, 730 workers walked out in protest at 430 others being laid off because of the Birmingham strike. They are expected back today.

The Triumph car factory at Coventry is also working again after a production hold-up caused by a go-slow by internal delivery drivers.

More widespread disruption among Coventry engineering works is likely to stem from the continuing tension between the engineering union and the local engineering employers' association over the ending last month of the 30-year-old agreement between them that fixes the rate of tool-room workers by relation to the average of skilled production workers.

## Yardstick

This has in the course of time come to be accepted as a yardstick for many other similarly skilled workers, including those at non-federated companies.

A mass meeting in the city shopping precinct yesterday endorsed the decision to hold selective one-day-a-week strikes and to continue the disruptive non-co-operation and overtime policies that have been enforced for nearly three months.

Mr. Andy Boyle, AUEW district secretary, described the employers' cancellation as the "greatest onslaught ever carried out in the city against organised labour."

"Before they impose a mortal wound on Coventry, we ask them to have second thoughts and to meet us so that we can discuss a return to the tool-room agreement."

This brought a sharp reply from the association. It pointed out that member companies had

## BOAC seeks £243 cut in London-Sydney air fare

BY RAY DAFTER

BOAC which has been among airlines pressing for cheap advanced purchase excursion fares on the North Atlantic, is to propose a similar big reduction in fares between Europe and Australia and New Zealand.

At the International Air Transport Association fares conference in Miami starting next Wednesday BOAC will suggest, for example, a return fare of £365 on the London-India-Sydney route, some £243 less than the present economy return fare.

To qualify for this fare passengers would have to book and pay for the ticket at least three months in advance; 25 per cent. of the fare would be non-refundable in the event of a passenger being unable to make the journey. The airline is taking a flexible attitude towards the length of advance purchase, however.

## Other proposals

Qantas, the Australian airline, is proposing a £395 round-trip advanced purchase fare which would have to be booked three months before departure while Pan American has a proposal for a £375 Sydney-Europe return fare, bookable six months in advance.

BOAC will point out that it is the only airline that has a cheap fare to combat the growing use of charter operations on the routes. At present passengers can fly at cheap charter rates between Europe and Singapore, combining this journey with the scheduled carrier flight for the remaining leg to Australia or New Zealand.

The Corporation estimates that about 25,000 one-way journeys per annum, representing a revenue of some £5m., are made this way.

Other proposals for the Europe-Australia route include a one-way excursion fare Sydney-Europe of £234.05. (The present single economy fare between Sydney and London is £204.45). Once again, this proposal by Qantas is based on the advanced purchase system with tickets being bought at

least three months before departure.

The Miami conference, which covers all worldwide routes other than those involving the North Atlantic, will start by discussing, among other proposals, fares for European routes.

To this sector BEA is leading the field with its plans for half-price fares on some European routes, as reported in the Financial Times on August 27.

Other European carriers seem to be waiting for the conference itself before presenting any cheap fare proposals they may have.

BOAC is expected to point out that the carriage of groups to India and Pakistan represents a considerable volume of business in the U.K.—worth about £2m. a year—in order to compete with the increasing operations of non-IATA charter and affinity group charters the airline is proposing a new affinity group fare between London-Europe and Karachi, Bombay or Delhi at a 60 per cent. discount on the scheduled economy class fare. Such a fare would be applicable to groups of 15 or more.

BOAC, Qantas and Pan Am may also propose an advanced purchase fare for U.S.-Australia routes.

THE INTERNATIONAL AIR Transport Association is expected to convene a meeting of airline executives next week, possibly on Friday, September 10, in an attempt at agreement with Lufthansa over a North Atlantic air fares package.

LATA has extended to September 15 the deadline due to expire yesterday for Lufthansa to decide whether it will join the other airlines in accepting the generally agreed package. As reported in the Financial Times yesterday, the West German Government has not yet agreed to Lufthansa's proposal to go it alone with a cheap fare plan.

Airlines are anxious that there should not be an open-rate situation on the North Atlantic, and this deadline extension, which was widely expected, allows for further discussions.

Lufthansa has said it plans to stand firm in rejecting the package in favour of its own proposed cheaper fares, but it is clear that the airline is coming under increasing pressure from other carriers, and possibly the West German Government, to reach some form of compromise.

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Builders are now expecting the current year to be the best for private housing activity since 1968 according to an inquiry conducted by the Department of the Environment.

It shows that the industry foresees starts in the private housing sector amounting to around 135,000 this year—20,000 more than predicted for 1971 at the end of last year.

Encouraging

The latest forecast, although considerably more encouraging than that of last November, represents a minor downward revision of the projections made in April. At that time, the builders expected starts of 230,000—the actual figure achieved in 1968—but this may

have proved to be just a little too optimistic.

Until the end of July, builders had started work on just over 112,000 private homes, an average of 16,000 houses for each month of this year. If this average is projected for the remainder of the year, starts for 1971 should amount to something in the region of the 195,000 now being estimated by the builders.

However, given one or two more excellent months for private housing activity—July proved to be one of the best on record in recent years with 19,800 starts—200,000 for the year could well be a possibility.

This figure would compare with 165,000 in the private sector during 1970 and 166,000 in the year before that.

Builders had completed just over 103,000 private homes by the end of July, a monthly average of a little under 15,000. A similar performance for the remainder of the year, should make the total figure nearly 180,000 houses. This would compare with 170,000 last year, 182,000 in 1969 and 222,000 in 1968.

The outlook for council house construction is by no means as clear, with activity varying considerably from month to month. One fact is quite apparent; that the number of starts and completions is going to be considerably below the level expected by the industry's Economic Development Committee when they reported on prospects at the beginning of the year.

## Private house building hope of best year since 1968

BY MICHAEL CASSELL

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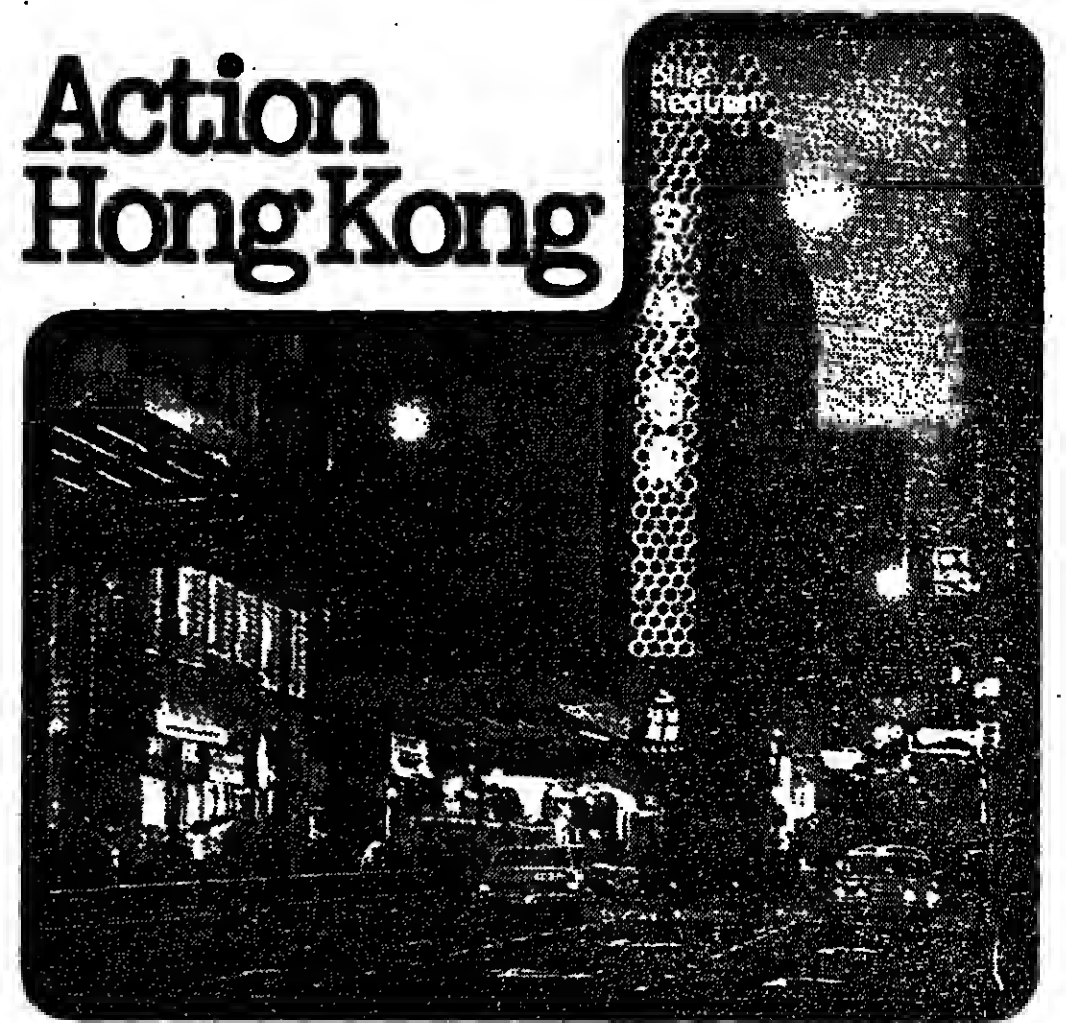
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## More London one-man buses

BY HAROLD BOLTER, INDUSTRIAL CORRESPONDENT

LONDON TRANSPORT has placed orders worth £18.5m. for 1,600 more "Londoner" double-decker one-man buses. The 1,600 more "Londoner" double-decker one-man buses. The 1,600 more "Londoner" double-decker one-man buses.



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مكتبة من الأهل

BY LESLIE PARKER, MINING EDITOR

## Zamanglo final

FINA dividend: of 15p is declared for the year to 1990 by the Bermuda-based Zambia Anglo American. Broadly in line with expectations, it follows an interim of 25p and a special payment of 124p; the latter reflected the company's receipt of high terminal dividends from the Zambia copper mines which are now 51 per cent owned by the Zambia Government.

Zamango's net profit for the past year comes out at £13.9m. This is not comparable with earnings in the previous transitional period for the Zambia copper

**Existing cash resources, which are substantial, will be used to finance the company's investments from redemption of loan stock held in Zambia Copper Investments, are to be utilised for the financing of Zamanulo's new career as an international mining finance house. Lower copper prices suggest that the current year's total payment will be less than 40p, but this is allowed for in the yield of over 18 per cent.**

**SILVERMINES**

Further to the news here yesterday that production has been resumed at Mogul of Ireland's lead-zinc mine in Tipperary, a progress report from Dublin's Silvermines company, which has a 25 per cent. stake therein, reveals that Mogul made a net profit of £564,193 in the half-year to June compared with £51,615 for the same period of 1970. Dur-

in the period further bonds were repaid reducing the outstanding debt to £3,660,657 as at June 30. Mogul produced 14,233 tons of lead concentrates and 63,010 tons of zinc concentrates in the half year. The labour strike which began on May 30 ended on July 10 but resumption of work was delayed until August 15 by an explosion at the main power transformer on July 4. A full output rate is expected this month. Silvermines remained at 21p yesterday.

## Factory lease by M.Y. Dart

Besides creating an addition to rental income the leasing marks the first step towards realising the company's long-term strategy within the group, says the Board.

The acquisition of long leasehold factory premises adjacent to the existing factory at Moxonon Street, Barnet, has made possible the construction of a new manufacturing which in accordance with consolidation plans will bring substantial benefits and economies.

New offices and further factory accommodation adjoining both buildings will also be provided for by a building now in course of erection and expected to be ready for occupation early in 1972.



counts

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Number of hauls	<i>A. balearicum</i> (%)	<i>A. balearicum</i> + <i>A. balearicum</i> + <i>A. balearicum</i> (%)
1	100	0
2	50	50
3	33	67
4	25	75
5	20	80
6	17	83
7	14	86
8	13	87
9	11	89
10	10	90

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# NUCLEAR INDUSTRIES

This Financial Times Survey marks the 4th International Conference on the Peaceful Uses of Atomic Energy which opens in Geneva next Monday.

## Admission fees to the club are high

By DAVID PISHLOCK, Science Editor

"Launching a reactor system is like joining an exclusive club; a high admission fee has to be paid initially to secure the option of future benefits and then a substantial annual subscription to cover the cost of providing the services needed to manage and maintain the facilities at a high level of efficiency." This is the view of E. S. Booth, CEBG Member of the Executive for Engineering, 1977.

Just how exclusive is the club for nuclear power? We might gauge from the fact that five nations only—the U.S., Britain, Canada, Russia and France—have launched substantial programmes based on reactor systems of their own design. And one, France, has allowed her membership to lapse for the time being by buying a U.S. design of reactor. Conceivably Canada, and even Britain too, could yet find the subscription too steep.

Nuclear electricity, showing a substantial economic advantage over 25-50 per cent over fossil fuel sources, will arrive only with the fast reactor. Where the fast neutron reactor differs from the slow-neutron or phenix thermal reactors the world is ordering to-day is that it allows neutrons to work very much harder. It has no moderator to slow them down, so their energy levels typically are 10 times as high. These lively neutrons are much more efficiently used, in other words the system has a good neutron economy. Moreover, excess neutrons, and any that may leak from the core are soaked up by a fertile material such as uranium-238, breeding more, and "breed" more plutonium, which can be returned to the reactor as fuel.

All nuclear nations are agreed on one point: the fast reactor is the "ultimate" to the atom; more than three wards which their nuclear pro-

grammes are directed. Only the time scale differs. The U.S., with \$38,000m. spent on or committed to their thermal systems, sees less urgency to introduce the fast reactor than Europe or Japan, where power costs are appreciably higher.

But the fast reactor relies heavily on the bedrock of thermal reactor experience. In the first place, no more than a tyro at turbines could hope to produce an RB-211 engine could an inexperienced reactor builder expect to make a fast reactor successfully. It is hundreds of times more highly rated than thermal power plants. In the second place, it is fuelled with plutonium, a by-product of the thermal systems, instead of enriched uranium.

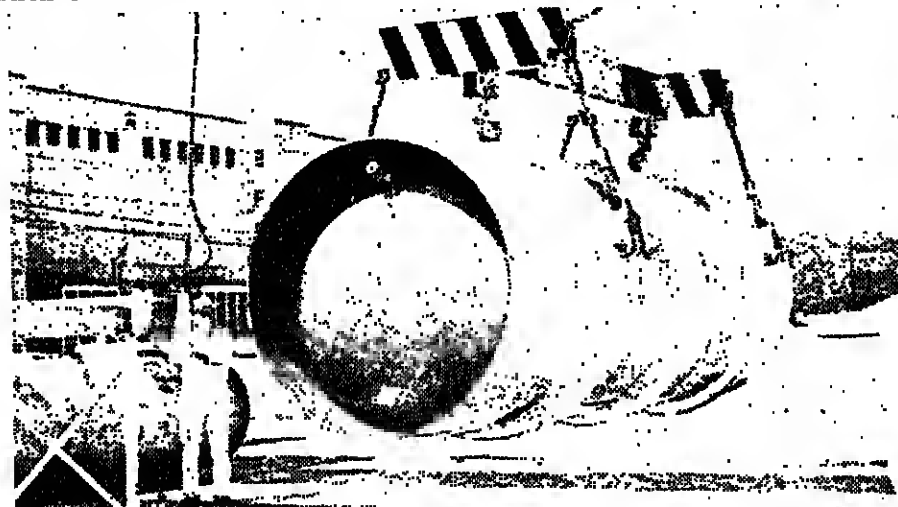
### Fast reactor

Like the Phoenix of Egyptian mythology, which when consumed by fire rose again from its ashes, the fast reactor raises power from the ashes of thermal reactors. (The French, who have a prototype fast reactor under construction at Marcoule, have named their project "Phenix").

For Britain, with the 250-MW prototype illustrated here near completion at Dounreay, and for France the economics of the fast reactor are closely allied to a first-generation nuclear power programme based on a gas-cooled natural uranium, the gas-cooled natural uranium systems adopted by both countries, tries yield plutonium more than three times as fast as the U.S. designs of water reactors.

Provided the calculations are right and these systems are "breed" more plutonium than they consume—the plutonium will extract far more of the energy latent in the atom; more than three times compared with about

**The Prototype Fast Reactor which is under construction at Dounreay in Scotland will pave the way for the large power fast reactors of the future.**



Uranium ore concentrates being transported by the UKAEA.

has been invested in a nuclear fleet, and for whom the two light water reactors were originally evolved.

By comparison, Britain's investment to reach the same stage of development of the gas-cooled system, including the cost of the economic magnon stations, is estimated at \$2,000m. A similar sum has now been committed to the advanced gas-cooled reactor stations. Unfortunately, while the U.S. has established commitments to 20,000 MW of light water reactor power outside the U.S. and the Eastern bloc, no overseas orders have been placed for the

AGR, or, moreover, are thought likely to.

Did Britain choose wrongly when, in the late 1950s, Hinton advised a gas-cooled route to about 60 per cent of the fast reactor? Water, a coolant of excellent heat transfer properties, with which power engineers were completely at home, offers some compelling advantages over the unfamiliar gas-cooled approach. An important one is a more compact reactor, a feature with an influence on capital costs, and one in which continuing progress has been assured by the special demands of the U.S. Navy. The PWR, between the water and gas-

cooled systems under construction. But in a world in which money is dear the AGR, although cheaper to fuel, is handicapped at the outset by high capital cost, while the burden increases as its competitors spread their entrance fees over burgeoning order books.

Two years ago the CEBG thought the answer to a plutonium supply situation which calls for the construction of thermal reactors for at least another two decades yet lay with a still more advanced type of gas-cooled reactor, much more highly rated than the AGR.

The high-temperature reactor (HTR), cooled with helium gas, even offered the seductive prospect of reducing the cost of the conventional side of a nuclear station, by by-passing the steam-raising cycle and driving gas turbines directly.

Unfortunately, in its eagerness to promote the HTR—some say because it was anxious to establish its independence of the U.K. Atomic Energy Authority—it ignored the cost, which all past experience shows will be high, of learning to build HTR stations; while the trauma of the RB-211 engine indicates that developing a big helium turbine could easily run up a bill of \$500m.

In the article that follows,

James Trotter recounts how this stand by the CEBG, and its consequent rejection of a British design of heavy water reactor, in international competition, has proved a match for the light water reactor, has led to a Government appraisal, now proceeding. It has several options: to remain faithful to the AGR, for which it has already paid dearly to learn how to build; to pay the price of introducing an HTR at the same time as it is introducing the fast reactor; or to abandon the British thermal reactors and build U.S.-designed light water reactors, probably PWRs, as France plans to do.

### Sales overseas

Or can a compromise be reached whereby Britain might take greater advantage of the subscriptions it has already paid to the nuclear club? A compromise might authorise the generating boards to continue to build AGRs, at the same time subsidising the cost of introducing the SGHWR into the British "grid" in anticipation of stimulating sales overseas.

Meanwhile it might seek ways of sharing the admission fee for the HTR with other nations, so that eventually it might succeed the AGR as a cheaper plutonium-producer for fast reactors.

## Sometimes an advanced technology company needs a bank with a few 'firsts' to its name

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## NUCLEAR INDUSTRIES II

# Outlook in Britain less than bright

By JAMES TROTTER

Britain's nuclear reactor industry is in bad shape. Starved of business, the Nuclear Power Group has just laid off 20 per cent of its headquarters staff. And British Nuclear Design and Construction, the other reactor-building consortium, does not seem to be any better off. The Government cannot find a buyer for the Industrial Reorganisation Corporation's shareholding in the company.

But the future looks even bleaker for the industry. Like the rest of the heavy electrical industry, it has been hit by the downturn in capital purchases by British electric utilities, themselves suffering sluggish demand growth. TNPG, with a design contract under its belt, thought it had the contract to build the four 660 MW Advanced Gas-Cooled Reactors for the Central Electricity Generating Board's Sizewell "B" station in the bag. But TNPG was left disappointed after the Electricity Council did its annual load forecasts and CEGB found it did not need four reactors right now. So there is no business for the industry this year.

### Present signs

The outlook for next year is not bright either. Present signs are that CEGB will buy one new power station next year, but could be Sizewell "B". But, short of cash itself, CEGB should buy the power station that costs the least in the short term: a low capital cost oil station. The North of Scotland Hydro-Electric Board could also hand out some business. It took a bid in July from TNPG (BNDC failed to respond to the Board's invitation) for a twin 660MW steam generating heavy-water reactor power station to be built at Stake Ness. But the future of Stake Ness is clouded, among other things, by the second disruption that the industry had to face in the shape of the Vinter Committee.

Peter Vinter is a Deputy Secretary in John Davies's Department of Trade and Industry, who, with two fellow committee-men, CEGB chairman Sir Stanley Brown and U.K. Atomic Energy Authority chairman Sir John Hill, is supposed to decide on a British nuclear reactor policy.

There already was a Reactor Policy Committee in being when Mr. Vinter came along. So one thing that the new committee means for sure is that

someone was none too happy with the old body. The secretive committee, chaired by Sir John Hill, became in the view of its critics a rubber stamping machine for badly-thought-out CEGB decisions.

It is denied, but the new committee could also have been designed to help the consortia. With active Government assistance, TNPG was leading America's Westinghouse, West Germany's Kraftwerk Union and Canadian General Electric in the competition to build Australia's first nuclear power station at Jervis Bay. TNPG's bid was based on the only British reactor system that remotely interests foreign utilities, the steam generating heavy water reactor. But meanwhile, back at home CEGB publicly proclaimed its preference for the High Temperature Gas-Cooled Reactor over SGHWR, inferring little British domestic faith in the system that Australia wanted to buy. This badly upset TNPG's supporters in Government, so may be Mr. Vinter, whose committee meant that CEGB had to go away and think again, was induced to shut CEGB up while TNPG went about its business in Australia. (In the end, Australia deferred construction of Jervis Bay.)

But while the new committee was perhaps designed to help the consortia, the effect was largely the reverse. By throwing reactor policy wide open while it sits, the committee has compounded the uncertainties facing the industry. Also, the composition of the committee, which includes no direct consortia representation, once again confirmed the traditional British Government/CEGB/UKAEA attitude that it's the consortia that matter the least. This caused raised eyebrows even at CEGB, often regarded as the number one consortium basher. (It is no coincidence, the argument goes, that the countries with monopolistic State utilities, Britain, France and Italy, are the countries with weak nuclear industries.)

Whatever the reason for its existence though, the Vinter Committee is now at work. Aided by a rash of working parties, it is examining just about every thermal reactor system in sight: the present system in commercial use in Britain, the AGR; CEGB's favourite reactor of the future last year, the HTGR; the overseas

SGHWR; and, by cut terms of reference. It seems to be, as they say, examining the implications of alternative decisions. Which may be a good thing.

### Best prediction

Right now, CEGB seems to have abandoned the HTGR because of its high development costs and the best prediction half way through Mr. Vinter's exercise on what it will actually do at the end of the day is to keep on doing what it was doing before—building AGR's.

The AGR has obvious attractions for CEGB. For one thing, though it is undoubtedly an expensive reactor system, the act

of changing systems is expensive for CEGB too. And under the present Government, it might be doubly expensive for CEGB because the Government is asking the Board to pick up more of the tab for Britain's nuclear R and D programme. Another reason for not changing systems is that none of the CEGB's AGR's is working yet and there is a good case for overcoming the problems of the AGR before taking on a new system and with it, almost certainly, a new set of problems.

For the component suppliers to the nuclear industry too, a decision to stick with the AGR has its attractions. They could keep on producing the same old components.

But the most urgent problem is neither to keep CEGB nor the component suppliers happy. It is to strengthen the ailing consortia. This could be done by the simple expedient of handing them some business. But on present forecasts, this could only be a short-term solution and the same old problem would come back again sooner or later. The real problem is that the best guess is that CEGB's long-term purchases of new generating plant will only be about 4,000MW a year. This, arguably, is not enough to keep two turbo-generator manufactur-

## Major investment in enrichment plants

By Dr. H. E. SCHIMMELBUSCH and P. JELINEK-FINK

Uranium enrichment is—at 30-35 per cent of the total cost—the most expensive step of the nuclear fuel cycle. For several reasons, it occupies an exceptional position in the nuclear industry.

All feasible enrichment technologies with the exception of the nozzle process are subject to strict classification. At the same time, the civilian requirements of the western world outside the U.K. and France are practically solely supplied by the U.S. Atomic Energy Commission (USAE), which means that the AEC has the position of a monopoly supplier. It must also be remembered that the build-up of enrichment capacities needs extremely high investment costs and that all existing enrichment plants were originally constructed for military programmes. Therefore, economic criteria were not the only factors applied.

During recent years it has become apparent that the existing U.S. enrichment capacities will be able to cover the requirements of the western world up to about 1980 only if they are enlarged by improvement and up-rating programmes and a con-

siderable amount of preproduction during the next several years is carried out. The annual needs of the western world and of Western Europe in the period 1970-85 show that the European demand is about 10,000 t SW (metric tons of separative work) in 1980 and about 18,000 t in 1985. On the basis of the current price level of \$/kg 32 SW these figures correspond to annual turnover of \$320m. In 1980 and \$576m. In 1985. Even assuming that the separative work needs for all reactors becoming operational before 1974 or 1975 will be committed on a long-term basis to existing enrichment suppliers—mainly, of course, to USAE—these figures will be reduced by just less than 10 per cent.

It has been indicated that new enrichment capacity will be necessary by about 1980. Since nuclear energy will play an increasing role in meeting Western Europe's electrical energy requirements, it is—for economic and political reasons—hardly tolerable to depend on one single supplier abroad. Some of the European countries, especially the U.K. and Germany, have a com-

mercially competitive reactor and nuclear fuels industry. The experience of recent years has shown that it is advantageous for this industry to be supported by a domestic source for uranium enrichment. These reasons and, of course, the aim to establish a new profitable industry able to gain a share of this very big market, have made uranium enrichment operations a matter of increasing interest in Europe during the last few years.

The investment necessary for a major enrichment plant is of the order of \$500m. to \$1,000m. The large investment and the difficulty of the technology, leading to additional research and development costs of several hundreds of millions of dollars, made it clear that multinational co-operation is necessary in this field.

Two initiatives have been taken in Europe in order to come to a multinational enrichment plant. The first is the trilateral agreement between the United Kingdom, Germany and the Netherlands on collaboration in the development and exploitation of the gas centrifuge process for producing enriched uranium. Under this contract two industrial organisations have been set up: CENTEC GmbH, Bensberg (Germany) which will develop and manufacture centrifuges and other components and will design and construct enrichment plants; and URENCO, Marlow (U.K.) which will own and operate the enrichment plants and sell enrichment services. The shares of both companies are held by industrial groups from the three countries.

Finally the Uranium Enrichment Corp. of South Africa (Ucor) has to be mentioned: Ucor is constructing a pilot enrichment plant based on a "unique enrichment process". The South Africans have contacted Japan and Australia to explore possible co-operation.

Continued on next page

## Power Reactors in Member States in operation and under construction

End of April 1971

Reactor Type	In Operation		In Construction	
	No. of Reactors	No. of Countries	No. of Reactors	No. of Countries
PWR	19	9	60	9
BWR	24	10	29	6
GCR	34	4	3	2
AGR	1	1	10	1
HTR	2	2	3	2
LWGR	10	2	8	1
HWR	8	5	13	8
Other Types	4	3	5	5
Total	102		131	

isn't really enough to keep two nuclear consortia going, he can use only a proportion of the 4,000MW will be nuclear.

So the two consortia should ideally be merged. This presents enormous problems. The House of Commons Select Committee of Science and Technology recommended a single nuclear contracting organisation to Mr. Anthony Wedgwood Benn but he could not work out a way of doing it. The consortia objected in the strongest

possible terms and so, too, did CEGB. But the consortia now aren't in such good shape to object, and even at CEGB there are signs that it is beginning to accept that maybe it will have to face up to monopoly domestic suppliers sooner or later. Right now, it faces unhealthy suppliers right across its purchasing spectrum: not just in nuclear reactors but also in turbine generators, transformers, switchgear and holders. Also it faces criticisms from overseas for protecting this unhealthy industrial edifice with a sophisticated array of non-tariff barriers to trade. And away with their domestic suppliers, the French had to make them compete with foreign suppliers.

As far as the choice of reactor is concerned, what the industry obviously needs to make it healthy is a reactor decisions; the Government, that will sell overseas. This wants to play safe, should its rules out the AGR because it is too expensive for anyone But if it is willing to take other than Britain's State monopoly risks, it should insist on SGHWR.

remotely interested in system. The high temperature cooled reactor is a long prospect. But that is not in the bank—in fact it is money out of the bank reports of its developments are correct—and money bank is what industry needs. So there are only really systems to choose from: light water reactors, SGHWR.

### Water reactors

U.S. light water reactors have the colossal advantage that are what sells just about everywhere in the world. Britain and Canada. Another advantage is that if Britain over to light water reactors wouldn't ever again find technological isolation as it done over the corrosion problem that hit the first generation magnox reactors. A disadvantage with light water reactors, that there are safety worries about them. Whether these are justified is debatable but it is upshot in Britain is that safety authorities might make them too expensive. A bigger disadvantage is that they are not British. At spending hundreds of millions of pounds on trying to develop a domestic nuclear technology it is a tough thing to do to a sophisticated industry with a sophisticated array of non-tariff barriers to trade. And away with their domestic suppliers, the French had to make them compete with foreign suppliers.

In the end, the French did the sensible way out of the problem would be to permit for the British to do so is monopoly domestic suppliers so overwhelmingly essential and then, when they're on their feet, make them compete with foreign suppliers. Whereas the French had systems that might sell in foreign markets, the British do in SGHWR. It is not certain. So, when it makes the make it healthy is a reactor decisions; the Government, that will sell overseas. This wants to play safe, should its rules out the AGR because it is too expensive for anyone But if it is willing to take other than Britain's State monopoly risks, it should insist on SGHWR.

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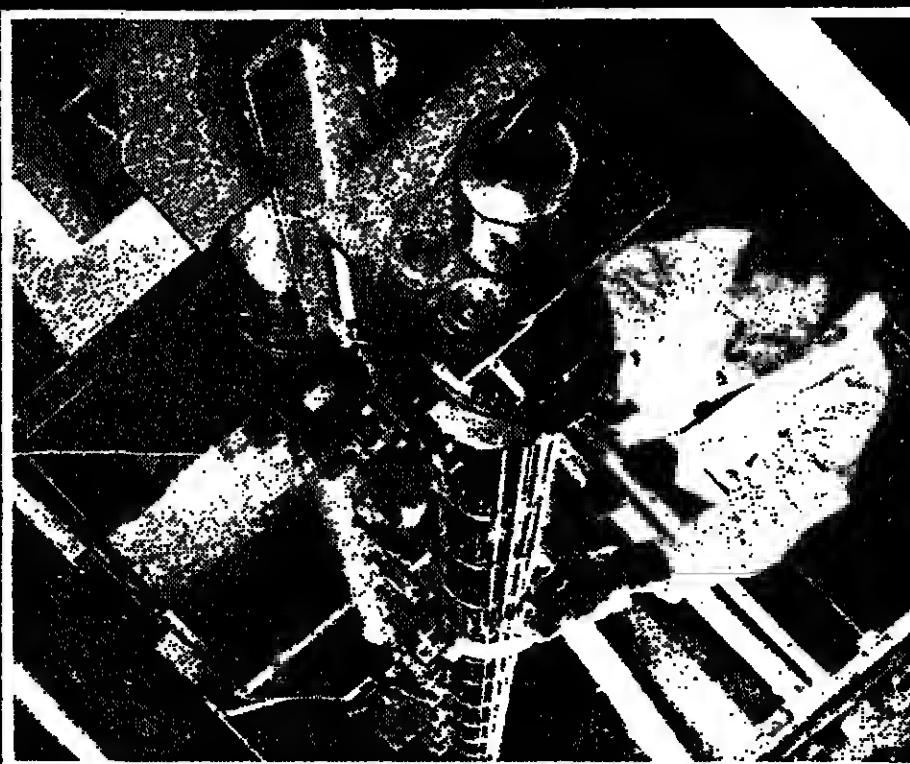
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  - Research and training reactors
  - Sub-critical assemblies
  - Hot Laboratories
  - Experimental rigs
  - Active waste disposal from laboratories
- Production**
  - Fuel element components
  - Fuel production plant
  - Radio isotope production equipment
- Power**
  - Reactor core components
  - Fuel handling
  - Small power reactors
  - Work in active environments

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### First phase

Meantime, at the invitation of the French Commissariat à l'Energie Atomique (CEA), companies in other European countries are at present considering whether to participate in a feasibility study under contract with CEA by engineering companies. The study is on the basis of the French gaseous diffusion technology developed by CEA.

The tripartite centrifuge organisations are entering the first phase of a centrifuge plant construction programme which envisages an enrichment capacity of 350 t SW/a: part of this will be constructed in the U.K., another section in the Netherlands. The first tranche of this capacity, about 90 t SW/a, will consist of demonstration plants currently under construction at the two sites in the U.K. and in the Netherlands. The tripartite companies have not yet finalised their plans for a large-scale expansion of centrifuge plant capacity. The companies can be expected to have substantial plants in operation by 1977 at the latest and to aim thereafter at providing the majority of the subsequent increase in European demand.

While the centrifuge process allows the extension of capacity in fairly small units, gaseous diffusion plants can economically be built only with capacities of 5,000 t SW/a at least. This means that an investment decision for a gaseous diffusion plant involving about \$1,000m. has to be taken not later than 1973/74 if additional capacity should be available by 1979/80. The French claim that their technology, based on the experience with the gaseous diffusion plant at Pierrelatte, is more proven than the centrifuge method. The promoters of the centrifuge on the other hand argue that under European conditions, where power costs are considerably higher than in the U.S., the power-intensive diffu-

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# NUCLEAR INDUSTRIES III

## Regrouping among European firms

SIMON RIPPON, Editor, Nuclear Engineering International

September 2 1971

interested

high temperature reactor is a new concept. But that is not the only fact in the light of its development. The cost of the reactor—and money spent on what industry here are only now beginning to choose from water reactors.

Water reactors

light water reactors offer a distinct advantage in that they sell just about anywhere in the world. In Canada, the average is that if Britain has a light water reactor, there are many interesting prospects of controversy associated with the technical, economic, and sociological aspects of the first generation of reactors. A disagreement is widespread among light water reactor designers as to whether there are safety reasons there is a desperate need in Britain to use for rationalisation on an international scale. Unfortunately, all moves in this direction are run up against the mind-boggling complexities of established industrial organisations in Europe and the intricacies of testing, bilateral and multinational international associations. Even so, there have been distinct signs of progress the last year and it is possible to see some emerging patterns in future development.

the end, the French with their reactor technology. Many would say that the problem British to do is simply one of too many overblowingly manufacturers chasing too few orders. The French say. This has certainly been the case that might set in, and the situation has worsened. The British are greatly aggravated by the WR. It is not that it could increase in unit size of all sell but it could electricity generating stations when it makes the vast new dimension of nations. The Government's involvement in the is to play safe, shooing of nuclear power plant switch to U.S. (especially in excess of £100m. if it is willing to station). But in addition, it is a significant change in the customer-supplier relationship. The electricity utilities, or in many cases groups of utilities, buying their large nuclear units did not able to undertake the overall supervision of the projects was their practice with conventional plant. Instead, they placed turnkey contracts with a single manufacturer or consortium of manufacturers. This may seem a logical enough approach to the layman, but any of the large European companies have found that even with their Government's support and U.S. technical assistance, they are not really large enough to undertake such vast projects with all the associated development work and financial risks. Indeed, even the U.S.

NUCLEAR  
Regret  
Europe  
SIMON RIPPON, F

## NUCLEAR INDUSTRIAL GROUPS IN EUROPE

Company or group of companies	Licence arrangements	Types of reactor offered	Orders completed Orders in hand			
			No.	Capacity MW (a)	No.	Capacity MW (c)
<b>GERMANY</b>						
AEG	GE (West.)	BWR	4	529	919	13
Siemens { Kraftwerk Union		PWR	2	390		
Krupp		HTR	1	13	1	300
BBC Mannheim { BBC-Krupp		HTR				
GHH-MAN						
Siemens	BNDG B & W	Na cooled	1	18		
Deutsche B. & W. { Interatom						
BBC Mannheim		AGR				
Deutsche B. & W. {		PWR				
U.S. B. & W.						
<b>FRANCE</b>						
Various consortia of French companies		gas-cooled	7	1,312	3	1,560
Jemmont Schneider	West.	PWR			1	870
Creusot Loire { Framatome						
CGE, Alsthom: SOGERCA	GE	BWR				
<b>BELGIUM</b>						
Belgonucleaire	Various	Various	1	11		
ACEC (Westinghouse) { ACECO	West.	PWR			2	800
Cockrill-Ougrée						
<b>ITALY</b>						
Ansaldo	GE	BWR			1	840
Agip Nucleare	TNPG	AGR				
	KWU	LWR				
Fiat, Montecatini Edison, Breda	West.	PWR				
<b>SWEDEN</b>						
ASEA	West.	BWR	2	450	3	1,922
AB Atomenergi { ASEA-Atom						1
Monitor Group		PWR				
<b>HOLLAND</b>						
Rhine-Schelde Group	GE	BWR				
VME-Stork		PWR				
<b>SWITZERLAND</b>						
BBC Baden-Westinghouse	West.	PWR	1	350	1	350
BBC Baden-GE	GE	BWR	1	306		
<b>INTERNATIONAL</b>						
ACECO, Framatome	West.	PWR	1	260	1	870
SOGERCO, BBC, GE	GE	BWR			1	850
WENESSE	West.	PWR				
TNPG, KWU		all types				

ants, with a domestic market for nuclear power plant equal to the rest of the world put together, have been rocked to their foundations as a result of heavy losses on some of their early commercial nuclear power projects.

## Unwieldy solution

Considerations such as these

d to the rather unwieldy solution of industrial consortia for Britain's large first generation programme of nuclear power stations and a similar approach, even more unwieldy, was followed in France. The German nuclear market has, on the other hand, been dominated by the huge electrical engineering companies, AEG and Siemens, who enjoy a position in Germany which is comparable to the American giants, General Electric (GE) and Westinghouse, with whom respectively

ey took out licences for boil-  
g water reactors (BWR) and fu-  
essurised water reactors (Gr  
WR). When two years ago the

EG and Siemens got together to form a Kraftwerk Union (KWU). It emphasised in no uncertain terms the need for a change in the supply of modern reactor plant. Now KWU has the largest order book for nuclear power plant outside the U.S. with a virtual monopoly in the German market and three important export orders in Argentina, the Netherlands and Austria. (Siemens now operates independently of the Westinghouse PWR licence).

In July of this year there was a further coming together of market leaders. The Nuclear Power Group (NPPG), who can claim credit for the largest foreign contract for nuclear power plant construction even if the present market situation is sadly depressed, signed a framework agreement with KWU under which the two groups will work together in bidding for jobs in third countries. They also intend to collaborate on the extensive business of developing and exploiting commercially the more advanced reactor types such as the fast breeder reactor.

# Enrichn

- (Cont'd.)

continued from previous page

The recognition that new enrichment plants will be necessary by 1980 and the wish by Europeans to become more dependent has, as has been pointed out to several projects inside the U.S. Two (or three) South Africa is included. Technologies are competing in different countries are promoted. These technologies. Due to the very large investment costs necessary for the build-up of enrichment plants and the high research and development effort, but especially because

cently merged with Fives-Lille, have strengthened their family ties with the U.S. B and W with a view to exploiting the American company's PWR design in France. 5.

European industrial and research organisations to sign a number of associated agreements. Involved in these supplementary agreements were: AEG (the German company, in which Siemens have a 49 per cent stake and Deutsche

**National basis**  
There are still a large number

to the nuclear industry, and the leading Belgian electrical engineering company, ACEC, by buying out Boveri's majority holdings in the two companies. These two were to be linked with Westinghouse associates and licensees throughout Europe to form the basis of a strong international company specially suited to undertaking large nuclear projects.

Even though Westinghouse were not allowed to take over control of Jeumont Schneider, they have since pressed ahead with their take over of ACEC and are co-ordinating their European operations through a new organisation in Brussels known as WENESE (Westinghouse Electric Nuclear Energy Systems; Europe). By making the maximum use of local manufacturing capacity and manpower, WENESE hope to make themselves more acceptable to those who fear U.S. domination in Europe.

**Not linked**

agreements and associations with U.S. companies. The consortium group, in which August Schneider have a 50 cent stake, has already been successful in obtaining the order for Fessenheim 1 with a Westinghouse PWR licence, and Generale d'Electricite (GE) is bidding strongly for a second unit through a group called SOGEREA, which has a BWR licence. In addition, Bock Atlantique, who re-

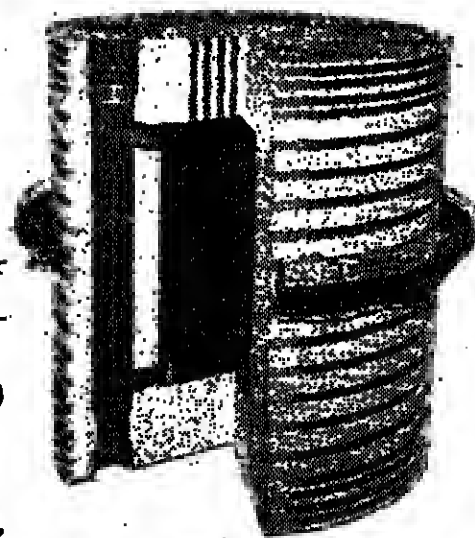
A new industrial grouping, which may have wider international significance, has recently emerged in Germany. Brown, Boveri & Cie (BBC Mannheim), who used to claim a sizeable chunk of the German market for electricity generating plants, have failed to break the KWU monopoly of the nuclear power plant market with the licence they bid for the British advanced gas-cooled reactor (AGR), and the private electricity utilities have also expressed concern about the lack of effective competition in the nuclear field.

A large domestic market for nuclear power plant and with the formidable reputation of ASEA for high quality electrical engineering, this group must be considered a serious competitor in international markets and a desirable partner for possible future alignments.

There are also some large engineering companies in Europe which have concentrated, some would say wisely, on the supply of components for all types of reactor no matter who is the prime contractor in the power station project. Notable success has been achieved in interna-

The new group has been formed by BBC Mannheim, Deutsche B&W and the U.S. B&W and will be able to offer the high efficiency PWR design of the American company. The wider implication of this grouping is, however, the bringing together of the huge B&W international family of boilermaking companies and the Brown Boveri Company (BBC Baden) who, from their base in Switzerland, enjoy a prominent position in the world heavy electrical engineering markets through a wide network of associates and licensees. The U.S. B&W has certainly been active during

*Aerial view showing the slipformed towers on the site of the 1250 MW Hartlepool Nuclear power station. County Durham*



We've come a long way since Calder Hall—the world's first commercial nuclear power station. And the pioneering spirit is still with us.

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Our Southall laboratories spear-headed a development programme leading to the construction of the world's largest internal spherical pre-stressed concrete vessels for the Wylfa station, which are

*Model of the pressure vessel at Hartlepool Nuclear Power Station, which is to be circumferentially pre-stressed. Cut-away shows position of "pod" boiler (left), one of the features of the simplified construction, available by employment of the wire-winding system.*

96 ft. diameter with walls 11 ft. minimum thickness, and a design pressure of 422 pounds per square inch.

Our research programme on pre-stressed concrete pressure vessels started in 1960 and is a continuing process in the development of more advanced reactors. Wyifa's engineering achievement has been followed by one equally impressive in the same field — the design of the cylindrical vessels for

*The wire-winding system designed and developed by Taylor Woodrow to apply circumferential pre-stress to nuclear and other large concrete pressure vessels, operating on a test rig at Southall.*



stations in which, for the first time, circumferential stressing of a large cylindrical vessel is accomplished by winding high densities of tensioned pre-stressing steel accurately around the outer periphery.

This wire-winding system marks a major advance in pre-stressing techniques. Some 8,500 miles of 0.2 inch diameter will be wound in all, in pre-formed channels in the outer surface of the vessels.

**Other aspects of Taylor Woodrow's expertise in up-to-date or rapidly developing techniques have been successfully applied to nuclear power station construction.**

At Hartlepool and Heysham the slip forming technique is advanced to become one of the features of construction — the erection of a set of 200 ft. high concrete towers will form the dual purpose of carrying the main reactor-building crane and serving as main structural elements of the reactor buildings.

But nuclear power is only part of the story. Taylor Woodrow undertake large-scale engineering projects all over the world. Solving engineering problems, rather than

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# WALL STREET OVERSEAS MARKETS

## Mild rally in cautious trading

BY OUR WALL STREET CORRESPONDENT

A MILD RALLY developed on Wall Street today, but the market was struggling to hold gains after a number of uninspiring news developments late in the session put some pressure on the list.

The Dow Jones Industrial Average finished 0.85 up at 899.02, after rising 5.25 to 903.40, while the NYSE All Common Index advanced 2 cents to 54.78. Volume expanded 340,000 shares to 10,770, while gains led losses by 700-600.

Near the close, the Commerce Department reported a drop in July construction spending, the first in a year.

In other developments, President Nixon asked for a delay in Federal pay increases and an influential economist called for a formal devaluation of the dollar. While analysts noted that none of these developments was especially important, their net effect was to cause a rise in an already hesitant stock market.

"Glamours" and Computers were mixed. Bensch and Lamb dropped \$1 to \$141 but Xerox advanced \$1.75 to \$171. IBM lost \$2 to \$301, but Honeywell Control Data rose \$3 to \$59. Aven Products declined \$1 to \$21.

Two oil issues led the active list. Amerasia rose \$1 to \$111, while it is defending itself against an Interior Department plan to cancel its import quota from the Virgin Islands. Occidental Petroleum added \$1 to \$161.

Airlines, especially those operating to North Atlantic cities, gained following the announcement of a conference next week in Geneva of heads of member Airlines of the International Air Transport Association (IATA) to seek approval of a new, low-fare package, and thus avoid a price war. IATA also extended its deadline for acceptance of the package by Lufthansa, the German airline, until September 15. Lufthansa has vetoed the package at a Montreal conference.

TWA featured with a rise of \$1 to \$251, after a U.S. Appeals Court affirmed a lower court ordering payment of \$145.4m. by Hughes Aircraft.

Western Union moved up \$1 to \$43 on the settlement of a strike. Motors gained \$1 to \$53, after it reported a sharp rise in its output in August, compared with a year ago, which also reported an output rise for August, shed \$1 to \$69.

Home Builders, both Mobile and Conventional, were also prominent. Refrain Industries gained \$1 to \$23 and Fleetwood Enterprises, which announced a stock split and plans for a mobile home park, jumped \$2 to \$37.

The American SE index put on 5 cents to 52.25.

Overseas closed \$1 up at \$71, after reporting sharply higher earnings.

### OTHER MARKETS

#### Canada firmer

Canadian Stock Markets were moderately higher at mid-day, overcoming an early small decline. The Industrial Index was up 0.45, Western Oil rose 1.01 and Golds gained 1.16, but Base Metals shed 0.31. Utilities were mixed.

Falconbridge Nickel improved \$1 to \$307.

PARIS—Generally firmer to hesitant trading. Gains in Banks and Financials included Indesec, Cie Bancaire and Lorraine. In Stores, Redoute advanced Frs.10.5 after higher sales forecasts.

Oils were hesitant, with Antar advancing but Lill Bonnières further declining. Roussel Uclaf rose in Chemicals. Metallurgies were weaker, especially Chiers and Deolun.

Germanes weakened slightly. Belgians were mixed, Dutch issues little changed. Transatlantic and Mining stocks resistant.

STOCK AND BOND YIELDS

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GERMANY—Markets were easier in dull conditions, while awaiting fiscal stimuli.

30-year Chemicals and Electricals were slightly off. Volkswagen, down DM2.5, and BMW, off DM1.5 led losses, among others. Rheinisch Stahl DM1.4 in Steels, and Hamborn also turned lower.

Bonds were mixed, with Public issues lower on balance but Corporate and Foreign Market issues were mostly well maintained.

BRUSSELS—Generally hesitant. Metallurgies were weak, with Hoboken down Frs.250 following loss of 1970 profit forecast. Sofina lost Frs.120 but Petrol rallied Frs.15. Coal issues firmed.

Among Foreign stocks, French issues tended slightly firmer, but German and Golds were weak. Dutch shares were little changed.

AMSTERDAM—Internationals were narrow mixed. Most Plantations were up, while Shippings were mixed. Hefken, down Fls.9, featured otherwise quietly mixed local Industrials. Naarden-Chemie lost another

Fls.1.5, but Gist-Broeders rose Fls.1.5. Banks eased, most Investment Funds edged lower. Insurances were firmer.

State Loans were quietly mixed. SWITZERLAND—Markets continued slightly irregularly. Swissair further declined Frs.10. Major Banks were generally well maintained but Financials and Insurances were narrowly mixed.

Plutonium Drawings, narrow in Chemicals and Foods. Stores were well maintained. Metals and Engineering showed only small price changes on the day.

State Bonds were very steady. In the Foreign sector, Dollar stocks were slightly mixed in fairly active trading, German and Dutch shares were very steady in rather quiet dealings.

STOCKHOLM—Sagging tendency. MILAN—Mainly lower, although some listed small gains were seen. Industrials were generally easier, with Fiat down Lire 23 to 2,178, Montedison off Lire 4 to 862 and Sna Viscosa off Lire 35 to 1,570.

TOKYO—Generally firm, following reports that the Finance Ministry was considering a large increase in the size of the National Budget for the 1972 financial year. Volume 230m. (150m) shares.

Construction Drawings, Machinery, Automobiles and Cements were higher in anticipation of larger Government expenditures for Public Works.

Construction advanced Yen 17 to 273, while Osumi rose Yen 50 to 718 and Kumagangum rose Yen 40 to 842. Penta Ocean Construction gained Yen 13 to 308. Kunitomo rose Yen 6 to 113 and Daiichi Cement rose by Yen 40 to 508. Daidokko Machinery rose Yen 50 higher to 857 and Tachikawa Machinery improved Yen 30 to 450.

House, however, continued to decline on the news that the Construction Ministry had directed Daiwa to suspend business in the Tokyo Metropolitan Area and Kanagawa Prefecture for a period of one month because of alleged questionable advertisements.

AUSTRALIA—All sectors retreated in dull trading. Mining "heavyweights" to move lower included Utah, off 17 cents at \$3.08, MIM, off 5 cents to \$3.15 and BHP, off 10 cents to \$3.21.

Among the few notable gains, Audmco picked up 10 cents at \$1.80 and Whim Creek also added 10 cents to \$4.40. Queensland Mines came back 20 cents to \$3.80. Great Boulder shed 3 cents at \$1.65. Spargo fell 5 cents at 95 cents.

Oil, Woodside were 9 cents lower at \$1.23, after \$1.19. Mid East dipped 4 cents to 80 cents and Magellan fell 15 cents to \$1.82.

Among Industrials, BHP were off 1 cent at \$1.92, after \$1.93. W. H. Smith fell 10 cents to \$5.50. Bank NSW lost 6 cents to \$5.54 and APN shed 3 cents at \$1.72.

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Bank Rate 6% (April 1, 1971) described as "very large indeed," was commonly quoted as the authorities had bought in the later stages of the balance of payments.

Credit was again in short supply in the Discount market for the Treasury bill take-up, though the Government disbursements were not placed readily.

Partly on local authority (account) outweighed transfers to the Exchequer, and a fairly large amount of assistance, by buying Treasury bills from the Discount houses.

Repayment to the Bank of England of the loans taken by the Discount houses on Monday, in the earlier part, and 54 per cent.

OSLO—Industrials and Shippings were easier, while Banks were quiet.

VIENNA—Slightly firmer. Banks were steady.

COPENHAGEN—The market opened with a majority of gains, although most leading issues were slightly easier.

JOHANNESBURG—Golds were slightly mixed after an easier start. Mining Financials were easier. Small issues were seen in Platinums, attributed to a drop in the free market price of the metal.

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# STOCK EXCHANGE DEALINGS

## from the Official List for Sept. 1

Wednesday, September 1 ..... 10,108 Friday, August 27 ..... 11,829  
Tuesday, August 31 ..... 10,169 Thursday, August 26 ..... 11,738

The list below gives the prices at which bargains done yesterday by members of the London Stock Exchange were recorded in the Stock Exchange Daily Official List. Members are not obliged to mark bargains except in special cases, and the list cannot, therefore, be regarded as a complete record of prices at which bargains were done.

Bargains are recorded in the Official List up to 2.15 p.m. only, but later transactions can be included in the following day's Official List. No indication is available as to whether a bargain represents a sale or purchase by members of the public. Markings are not necessarily in order of execution, and only one bargain in any one security at any one price is recorded.

The number of dealings marked in each section follows the name of the section. Unless otherwise denoted shares are £1 fully paid and stock £100 fully paid. Stock Exchange securities are quoted in pounds and fractions of pounds or in new pence and fractions of new pence.

Bargains done previous day. Bargains done with members of a recognised stock exchange. Bargains done for delayed delivery or "on business".

General Enquiries: (1) 101-102, 103-104, 105-106, 107-108, 109-110, 111-112, 113-114, 115-116, 117-118, 119-120, 121-122, 123-124, 125-126, 127-128, 129-130, 131-132, 133-134, 135-136, 137-138, 139-140, 141-142, 143-144, 145-146, 147-148, 149-150, 151-152, 153-154, 155-156, 157-158, 159-160, 161-162, 163-164, 165-166, 167-168, 169-170, 171-172, 173-174, 175-176, 177-178, 179-180, 181-182, 183-184, 185-186, 187-188, 189-190, 191-192, 193-194, 195-196, 197-198, 199-200, 201-202, 203-204, 205-206, 207-208, 209-210, 211-212, 213-214, 215-216, 217-218, 219-220, 221-222, 223-224, 225-226, 227-228, 229-230, 231-232, 233-234, 235-236, 237-238, 239-240, 241-242, 243-244, 245-246, 247-248, 249-250, 251-252, 253-254, 255-256, 257-258, 259-260, 261-262, 263-264, 265-266, 267-268, 269-270, 271-272, 273-274, 275-276, 277-278, 279-280, 281-282, 283-284, 285-286, 287-288, 289-290, 291-292, 293-294, 295-296, 297-298, 299-300, 301-302, 303-304, 305-306, 307-308, 309-310, 311-312, 313-314, 315-316, 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2259-2260, 2261-2262, 2263-2264, 2265-2266, 2267-2268, 2269-2270, 2271-2272, 2273-2274, 2275-2276, 2277-2278, 2279-2280, 2281-2282, 2283-2284, 2285-2286, 2287-2288, 2289-2290, 2291-2292, 2293-2294, 2295-2296, 2297-2298, 2299-2300, 2301-2302, 2303-2304, 2305-2306, 2307-2308, 2309-2310, 2311-2312, 2313-2314, 2315-2316, 2317-2318, 2319-2320, 2321-2322, 2323-2324, 2325-2326, 2327-2328, 2329-2330, 2331-2332, 2333-2334, 2335-2336, 2337-2338, 2339-2340, 2341-2342, 2343-2344, 2345-2346, 2347-2348, 2349-2350, 2351-2352, 2353-2354, 2355-2356, 2357-2358, 2359-2360, 2361-2362, 2363-2364, 2365-2366, 2367-2368, 2369-2370, 2371-2372, 2373-2374, 2375-2376, 2377-2378, 2379-2380, 2381-2382, 2383-2384, 2385-2386, 2387-2388, 2389-2390, 2391-2392, 2393-2394, 2395-2396, 2397-2398, 2399-2400, 2401-2402, 2403-2404, 2405



# F.T. ACTUARIES SHARE INDICES

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## EQUITY GROUPS

### GROUPS & SUB-SECTIONS

Prices in parentheses after national market show number of stocks		Index No.	Day's Change	Friday, Sept. 3, 1971		Saturday, Sept. 4, 1971		Div. Yield %	Index No.	Index No.	Index No.	Index No.	Index No.	1971		Since completion	
				Price	Change	Price	Change							High	Low	High	Low
<b>CAPITAL GOODS GROUP (184)</b>																	
Aircraft and Components (3)	152.73	-0.3	5.04	13.97	5.21	166.14	167.00	158.88	158.66	117.24	153.82	103.03	181.56	86.69	153.82	103.03	181.56
Aluminum and Components (13)	116.97	-1.2	7.06	14.17	8.33	115.04	115.65	117.76	117.56	66.78	115.23	115.65	117.76	85.64	115.23	115.65	117.76
Building Materials (29)	156.19	-0.1	5.00	20.00	5.41	128.39	167.68	153.00	158.06	97.80	158.00	98.30	187.98	83.67	158.00	98.30	187.98
Contracting and Construction (19)	248.89	-0.8	8.83	17.76	8.48	240.83	240.83	240.84	240.87	120.63	242.56	120.53	242.56	84.57	242.56	120.53	242.56
Electric, Gas, Electric Rad. & TV (13)	373.90	-0.2	5.14	18.46	5.01	374.46	377.74	379.79	379.00	198.48	378.99	120.53	350.11	84.77	378.99	120.53	350.11
Engineering (50)	144.88	-0.4	6.81	12.13	6.31	146.26	146.02	147.87	147.77	113.53	144.88	102.56	186.55	82.39	144.88	102.56	186.55
Machine Tools (18)	66.37	-1.1	7.35	16.64	6.12	65.11	66.29	66.84	66.56	56.36	66.37	62.51	147.68	63.67	66.37	62.51	147.68
Miscellaneous (25)	129.50	-0.4	7.81	12.81	4.45	130.03	128.98	130.65	161.20	111.33	129.50	128.99	151.62	65.00	129.50	128.99	151.62
<b>CONSUMER GOODS (DURABLE) GROUP (54)</b>																	
Automobiles (14)	778.07	-0.8	8.10	16.41	6.02	173.08	174.86	174.76	176.50	161.20	175.30	117.35	187.87	78.93	175.30	117.35	187.87
Electronics, Radio and TV (14)	163.60	-0.2	5.51	16.35	3.39	164.00	164.06	168.65	187.11	144.21	167.11	126.51	199.86	71.11	167.11	126.51	199.86
Household Goods (15)	188.81	-0.6	8.21	18.11	3.49	189.76	189.77	158.36	168.76	124.44	182.36	115.62	183.53	61.16	182.36	115.62	183.53
Motors and Distributors (27)	116.40	-1.1	6.40	66.72	6.66	117.69	118.14	116.98	115.50	87.27	116.50	121.31	170.55	75.01	116.50	121.31	170.55
<b>CONSUMER GOODS (NONDURABLE) GROUP (175)</b>																	
Breweries (21)	152.78	-0.0	0.17	15.32	3.50	158.93	159.56	159.11	158.08	117.66	159.27	123.30	194.87	80.31	159.27	123.30	194.87
Wines and Spirits (7)	174.09	-0.4	5.99	16.99	4.02	174.83	176.06	178.06	173.40	140.71	176.01	142.51	188.05	75.87	176.01	142.51	188.05
Entertainment and Catering (38)	300.94	+0.1	7.15	19.99	3.87	300.06	300.95	300.81	300.76	157.82	302.64	155.74	318.71	118.74	302.64	155.74	318.71
Food Manufacturing (24)	144.37	-0.4	5.92	15.16	3.76	144.96	145.44	145.42	144.73	103.78	144.96	103.74	171.54	65.93	144.96	103.74	171.54
Food Retailing (17)	141.17	-0.4	6.80	19.17	3.87	142.70	143.26	143.83	141.84	87.86	142.70	100.33	153.96	94.61	142.70	100.33	153.96
Newspapers and Publishing (18)	142.71	-0.1	6.00	16.67	4.93	143.83	143.85	143.75	143.53	106.03	143.83	101.15	165.86	79.50	143.83	101.15	165.86
Packaging and Paper (18)	128.59	-0.7	6.51	16.67	4.37	116.44	119.85	151.29	121.47	101.87	128.59	121.47	161.89	63.65	128.59	121.47	161.89
Stores (30)	162.82	-	4.59	22.81	3.00	169.29	169.28	159.68	167.98	106.07	160.64	104.48	150.64	72.74	160.64	104.48	150.64
Textiles (21)	176.00	+0.5	6.13	17.96	5.15	170.19	178.27	177.57	173.38	108.63	177.20	107.51	165.73	86.90	177.20	107.51	165.73
Tobacco (3)	258.56	-0.4	8.30	10.70	8.66	234.44	206.67	235.77	238.62	190.03	235.77	120.51	179.98	60.72	235.77	120.51	179.98
Toys and Games (6)	48.95	-0.5	0.87	118.20	3.96	48.08	46.05	46.56	45.23	61.36	48.95	46.05	156.78	45.02	48.95	46.05	156.78
<b>OTHER GROUPS</b>																	
Chemicals (19)	161.49	-	5.83	19.10	3.40	151.50	158.93	193.36	193.82	106.94	160.92	138.19	301.32	83.26	160.92	138.19	301.32
Office Equipment (10)	198.69	+0.6	3.66	26.18	1.56	193.71	198.93	198.36	200.51	106.94	193.03	155.93	300.71	109.16	193.03	155.93	300.71
Shipping (10)	319.24	-1.5	7.28	13.65	8.14	324.17	326.14	330.38	324.77	318.09	325.14	269.76	308.44	76.50	325.14	269.76	308.44
Miscellaneous (unclassified) (44)	198.71	+0.1	6.78	19.69	6.59	196.50	187.01	187.04	186.03	138.96	198.71	186.03	200.23	61.68	198.71	186.03	200.23



~~---CATERING AND METAL-General-Cont'd~~ | ~~HOTELS AND CATERERS-Continued~~

## FT SHARE INFORMATION SERVICE

ENGINEERING AND METAL-General (Contd.)										HOTELS AND CATERERS-Continued									
1971		Stock	Number of Shares	Low	High	Low	High	Low	High	1971		Stock	Number of Shares	Low	High	Low	High		
High/Low																			
591	106	Battersea Shell	189	37	48	3.9	5.5	210	250	Curzon Hm 555	150	150	150	150	150	150	150		
592	52 1/2	Bellway Lightings	1	1	1	1	1	1	1	De Vries Hotels	150	150	150	150	150	150	150		
593	42	BGU & Smith	8	2	2	2	2	2	2	Golden Reg Exp	115	115	115	115	115	115	115		
594	20 1/2	Birmingham	188	2	2	2	2	2	2	Grange Hotel	150	150	150	150	150	150	150		
595	42	Birmingham	188	2	2	2	2	2	2	Hampton Hotel	150	150	150	150	150	150	150		
596	42	Birmingham	188	2	2	2	2	2	2	Kingston Park	150	150	150	150	150	150	150		
597	42	Birmingham	188	2	2	2	2	2	2	London Hotel	150	150	150	150	150	150	150		
598	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
599	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
600	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
601	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
602	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
603	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
604	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
605	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
606	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
607	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
608	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
609	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
610	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
611	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
612	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
613	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
614	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
615	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
616	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
617	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
618	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
619	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
620	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
621	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
622	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
623	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
624	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
625	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
626	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
627	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
628	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
629	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
630	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
631	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
632	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
633	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
634	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
635	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
636	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
637	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
638	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
639	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
640	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
641	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
642	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
643	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
644	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
645	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
646	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
647	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
648	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
649	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
650	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
651	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
652	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
653	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
654	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
655	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
656	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
657	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
658	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
659	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
660	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
661	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
662	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
663	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
664	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
665	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
666	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
667	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
668	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
669	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
670	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
671	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
672	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
673	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
674	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
675	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
676	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
677	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
678	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
679	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
680	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
681	42	Birmingham	188	2	2	2	2	2	2	Manor Hotel	150	150	150	150	150	150	150		
682	4																		

41	152	Macpherson(D.)	371	14	1.3	9.7	29.2	80	80	Samir(UM)	30	43	2.3	10.3	10.1
75	155	Tratex	162	38	2.4	2.3	18.9	162	76	Tratex	162	162	2.0	3.7	13.3

[illegible]

196	81	Tunn Cem. 850p	178	—	15	1.4	4.8	17.1	40	20	13.0	1.5	3.3	3.1	3.1	
92	35	Turriff Const'n.	46	-2	—	—	—	—	145	86½	138m	+2	27	1.7	4.9	2.0

[illegible]

153	97	Philblack (50p)	132	+1	18	φ	6.8	φ	162	103	Adwest Corp. ....	149	-2	26	1.6	4.2	14.5
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[illegible]

17	10	Benley's 10p	181	—	—	—	—	102	92	Donner Eng. 5p	22	25	6.0	12.9
43	34	Benson's Hy 10p	331	+12	18	2.2	6.4	8.5	2412	132	22	25	6.0	12.9

120	40	Chubb Gun	65	18	2.0	6.6	7.7	17	13	Stiefel	59	14	287	9
121	40	Chubb Gun	65	18	2.0	6.6	7.7	17	13	Stiefel	59	14	287	9
122	39	Danish-Gra	125	8	8.0	6.6	7.4	84	18	Eleonore	100	7	116	1
70	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
71	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
72	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
73	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
74	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
75	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
76	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
77	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
78	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
79	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
80	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
81	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
82	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
83	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
84	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
85	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
86	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
87	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
88	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
89	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
90	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
91	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
92	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
93	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
94	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
95	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
96	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
97	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
98	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
99	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
100	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
101	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
102	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
103	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
104	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
105	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
106	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
107	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
108	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
109	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
110	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
111	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
112	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
113	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
114	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
115	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
116	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
117	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
118	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
119	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
120	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
121	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
122	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
123	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
124	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
125	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
126	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
127	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
128	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
129	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
130	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
131	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
132	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
133	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
134	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
135	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
136	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
137	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
138	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
139	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
140	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
141	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
142	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
143	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
144	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
145	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
146	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
147	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
148	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
149	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
150	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
151	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
152	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
153	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
154	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
155	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
156	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
157	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
158	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
159	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
160	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
161	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
162	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
163	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
164	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
165	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
166	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
167	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
168	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
169	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
170	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
171	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
172	44	Kistner's	50	25	12.2	6.6	8.1	59	20	Elav. & Eng.	60	1	5	4
173	44</													

450	287	OL Universal...	425	-----	425	1.8	2.6	11.0	57	18	Davidson 50p...	23	-1	-	-	-	-
439	271	Do. A* Ori...	418	+1	425	1.8	9.6	21.0	10	7	D'vo&Met A*10p	9m2	-----	221g	-	3.1	-

126	3	Pyatt/W J Top	1972	20.8	1.8	6,074.6	418	24	Giam/Nov	403	14	14.2	6.0
130	9	Bakumun W J Top	15	20.4	1.1	6,044.4	419	25	Ward/Nov	404	14	14.2	6.0
134	1	Black/Nov	15	20.4	1.1	6,044.4	420	26	Ward/Nov	405	14	14.2	6.0
136	1	Boeckle Col 50/305	25	17.4	1.6	5,823.2	421	27	Graham/Nov	406	14	14.2	6.0
138	1	Chapman A 50/3	4892	17.4	1.6	5,823.2	422	28	Graham/Nov	407	14	14.2	6.0
140	1	McClure W J Top	15	17.4	1.6	5,823.2	423	29	Graham/Nov	408	14	14.2	6.0
142	1	McClure W J Top	15	17.4	1.6	5,823.2	424	30	Graham/Nov	409	14	14.2	6.0
144	1	McClure W J Top	15	17.4	1.6	5,823.2	425	31	Graham/Nov	410	14	14.2	6.0
146	1	McClure W J Top	15	17.4	1.6	5,823.2	426	32	Graham/Nov	411	14	14.2	6.0
148	1	McClure W J Top	15	17.4	1.6	5,823.2	427	33	Graham/Nov	412	14	14.2	6.0
150	1	McClure W J Top	15	17.4	1.6	5,823.2	428	34	Graham/Nov	413	14	14.2	6.0
152	1	McClure W J Top	15	17.4	1.6	5,823.2	429	35	Graham/Nov	414	14	14.2	6.0
154	1	McClure W J Top	15	17.4	1.6	5,823.2	430	36	Graham/Nov	415	14	14.2	6.0
156	1	McClure W J Top	15	17.4	1.6	5,823.2	431	37	Graham/Nov	416	14	14.2	6.0
158	1	McClure W J Top	15	17.4	1.6	5,823.2	432	38	Graham/Nov	417	14	14.2	6.0
160	1	McClure W J Top	15	17.4	1.6	5,823.2	433	39	Graham/Nov	418	14	14.2	6.0
162	1	McClure W J Top	15	17.4	1.6	5,823.2	434	40	Graham/Nov	419	14	14.2	6.0
164	1	McClure W J Top	15	17.4	1.6	5,823.2	435	41	Graham/Nov	420	14	14.2	6.0
166	1	McClure W J Top	15	17.4	1.6	5,823.2	436	42	Graham/Nov	421	14	14.2	6.0
168	1	McClure W J Top	15	17.4	1.6	5,823.2	437	43	Graham/Nov	422	14	14.2	6.0
170	1	McClure W J Top	15	17.4	1.6	5,823.2	438	44	Graham/Nov	423	14	14.2	6.0
172	1	McClure W J Top	15	17.4	1.6	5,823.2	439	45	Graham/Nov	424	14	14.2	6.0
174	1	McClure W J Top	15	17.4	1.6	5,823.2	440	46	Graham/Nov	425	14	14.2	6.0
176	1	McClure W J Top	15	17.4	1.6	5,823.2	441	47	Graham/Nov	426	14	14.2	6.0
178	1	McClure W J Top	15	17.4	1.6	5,823.2	442	48	Graham/Nov	427	14	14.2	6.0
180	1	McClure W J Top	15	17.4	1.6	5,823.2	443	49	Graham/Nov	428	14	14.2	6.0
182	1	McClure W J Top	15	17.4	1.6	5,823.2	444	50	Graham/Nov	429	14	14.2	6.0
184	1	McClure W J Top	15	17.4	1.6	5,823.2	445	51	Graham/Nov	430	14	14.2	6.0
186	1	McClure W J Top	15	17.4	1.6	5,823.2	446	52	Graham/Nov	431	14	14.2	6.0
188	1	McClure W J Top	15	17.4	1.6	5,823.2	447	53	Graham/Nov	432	14	14.2	6.0
190	1	McClure W J Top	15	17.4	1.6	5,823.2	448	54	Graham/Nov	433	14	14.2	6.0
192	1	McClure W J Top	15	17.4	1.6	5,823.2	449	55	Graham/Nov	434	14	14.2	6.0
194	1	McClure W J Top	15	17.4	1.6	5,823.2	450	56	Graham/Nov	435	14	14.2	6.0
196	1	McClure W J Top	15	17.4	1.6								

34	18	Alv/Intervistop	23				418	20	Black/Nov	402	14	14.2	6.0	
36	1	Angus/Intervistop	23	+1	80	4.0	6,712.8	419	21	Black/Nov	403	14	14.2	6.0
38	1	Angus/Intervistop	23		80	4.0	6,712.8	420	22	Black/Nov	404	14	14.2	6.0
40	1	Angus/Intervistop	23		80	4.0	6,712.8	421	23	Black/Nov	405	14	14.2	6.0
42	1	Angus/Intervistop	23		80	4.0	6,712.8	422	24	Black/Nov	406	14	14.2	6.0
44	1	Angus/Intervistop	23		80	4.0	6,712.8	423	25	Black/Nov	407	14	14.2	6.0
46	1	Angus/Intervistop	23		80	4.0	6,712.8	424	26	Black/Nov	408	14	14.2	6.0
48	1	Angus/Intervistop	23		80	4.0	6,712.8	425	27	Black/Nov	409	14	14.2	6.0
50	1	Angus/Intervistop	23		80	4.0	6,712.8	426	28	Black/Nov	410	14	14.2	6.0
52	1	Angus/Intervistop	23		80	4.0	6,712.8	427	29	Black/Nov	411	14	14.2	6.0
54	1	Angus/Intervistop	23		80	4.0	6,712.8	428	30	Black/Nov	412	14	14.2	6.0
56	1	Angus/Intervistop	23		80	4.0	6,712.8	429	31	Black/Nov	413	14	14.2	6.0
58	1	Angus/Intervistop	23		80	4.0	6,712.8	430	32	Black/Nov	414	14	14.2	6.0
60	1	Angus/Intervistop	23		80	4.0	6,712.8	431	33	Black/Nov	415	14	14.2	6.0
62	1	Angus/Intervistop	23		80	4.0	6,712.8	432	34	Black/Nov	416	14	14.2	6.0
64	1	Angus/Intervistop	23		80	4.0	6,712.8	433	35	Black/Nov	417	14	14.2	6.0
66	1	Angus/Intervistop	23		80	4.0	6,712.8	434	36	Black/Nov	418	14	14.2	6.0
68	1	Angus/Intervistop	23		80	4.0	6,712.8	435	37	Black/Nov	419	14	14.2	6.0
70	1	Angus/Intervistop	23		80	4.0	6,712.8	436	38	Black/Nov	420	14	14.2	6.0
72	1	Angus/Intervistop	23		80	4.0	6,712.8	437	39	Black/Nov	421	14	14.2	6.0
74	1	Angus/Intervistop	23		80	4.0	6,712.8	438	40	Black/Nov	422	14	14.2	6.0
76	1	Angus/Intervistop	23		80	4.0	6,712.8	439	41	Black/Nov	423	14	14.2	6.0
78	1	Angus/Intervistop	23		80	4.0	6,712.8	440	42	Black/Nov	424	14	14.2	6.0
80	1	Angus/Intervistop	23		80	4.0	6,712.8	441	43	Black/Nov	425	14	14.2	6.0
82	1	Angus/Intervistop	23		80	4.0	6,712.8	442	44	Black/Nov	426	14	14.2	6.0
84	1	Angus/Intervistop	23		80	4.0	6,712.8	443	45	Black/Nov	427	14	14.2	6.0
86	1	Angus/Intervistop	23		80	4.0	6,712.8	444	46	Black/Nov	428	14	14.2	6.0
88	1	Angus/Intervistop	23		80	4.0	6,712.8	445	47	Black/Nov	429	14	14.2	6.0
90	1	Angus/Intervistop	23		80	4.0	6,712.8	446	48	Black/Nov	430	14	14.2	6.0
92	1	Angus/Intervistop	23		80	4.0	6,712.8	447	49	Black/Nov	431	14	14.2	6.0
94	1	Angus/Intervistop	23		80	4.0	6,712.8	448	50	Black/Nov	432	14	14.2	6.0
96	1	Angus/Intervistop	23		80	4.0	6,712.8	449	51	Black/Nov	433	14	14.2	6.0
98	1	Angus/Intervistop	23		80	4.0	6,712.8	450	52	Black/Nov	434	14	14.2	6.0
100	1	Angus/Intervistop	23		80	4.0	6,712.8							

Recent Issues \* and \* Reprint \*



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# STEEL

PERSONAL STEEL SERVICE  
FROM ALL GKN STEEL  
STOCKHOLDING COMPANIES

## Lombard Growth takes another knock

BY JOE ROGALY

ONE MAN'S contribution to the gross national product may be another man's poison. That, at any rate, is the apparent reasoning behind the extraordinarily powerful movement against economic growth in the United States. The main proponents would not use such a phrase, of course; they would call it an ecological or environmental crusade. Never mind the words—the fact is that the new doctrine would, if applied to its extreme form, retard the expansion of the American economy.

### New movement

This can be seen from two recent examples. Only yesterday our Washington correspondent reported that because of pressure from moderate devotees of the new theology, the oil pipeline of Alaska will cost more than would otherwise have been the case (because of the placatory safety and cosmetic devices that must now be built in). What is more, if the extreme environmentalists have their way there will not only be no pipeline at all, but Alaska will be kept undeveloped. And just a couple of weeks ago, there was a surprising amount of protest against one of the domestic elements of President Nixon's new economic policy on the ground that it favoured the motor industry and would lead to the crowding of America's cities with yet more cars.

As with so many phenomena, the new movement has spread to Britain. The consequence will be that over the next few years industry will find itself subjected, on an increasing scale, to restraints on the siting of its factories, criticism of the social effects of its products, and comprehensive regulation of the final destination of its effluents. This development is of such importance to any economy that it affects that we really must clear our minds about it. The extremists on the pro-growth side of the argument can put their case simply thus: If the GNP is not to be enlarged, where is the money to come from to pay for the many developments that the opponents of the machine would themselves consider desirable, like more medical care, housing, social welfare, and so on? Unmodified, this argument suggests that industry should be allowed to develop in more or less whatever manner the market dictates.

### America's GNP

Yet this is surely as wrong-headed as the opposite extreme. The way out is to set on one side thoughts about the size of the GNP and to concentrate on its quality. This is, however, easier said than done. Attempts to quantify the "social cost" of such and such an economic development must inevitably be subjective. Even so, there are ways in which new ideas can help. As reported yesterday, the aluminium can industry in the U.S. is meeting criticism of the throw-away cans by paying to have them brought back; it may yet turn a profit on the deal. The output of the scrap-aluminium scheme must then be counted as an addition to America's GNP. Special anti-pollution devices on motor cars could similarly constitute additions to the national product—at least to the extent that the extra cost of buying them did not diminish the sales.

### Difficult

The equation that dictates that unless there are more resources there will be less to devote to new developments could be solved, at least in part, by switching the use of presently available resources from one section of the economy to another. Anybody who proclaims this is not up to his eyes in choosing what it is that we now have that we might be willing to do without. This is always a difficult choice; the usefulness of the approach is further limited by the fact that for everyone except those who wish to return to living in caves, there must come a point at which there is nothing further that he would want out of life. It is therefore more practical to consider how best to spend any extra resources that might come our way. In America, the moderate environmentalists would legislate against the deleterious effects (while acknowledging that in some cases this may retard the growth rate) and (b) be certain everyone knows what the extra resources are for.

## THE LEX COLUMN

# Contrasts in the composites

On the face of it, Sun Alliance and General Accident were placed at opposite ends of the recovery spectrum this year, with GA far the greater potential beneficiary of an upturn in U.S. and U.K. motor underwriting. In the event a better half-year performance by SA than by GA produced a surprisingly calm reaction—SA up to 12p to 480p and GA down just 1p to 188p.

Still, in the case of GA, a £1.85m. turnaround to a £235,000 underwriting profit does mean an acceleration in the improvement after the first quarter's rate of £730,000 even if that was depressed by a £1m. deterioration in Canada. But for the present it means that we cannot look for a cut of more than £4m. or £5m. in last year's £8m. underwriting loss. It may be that with an operating ratio down to 98.15 (against 98.65) in the U.S., GA (along with the industry as a whole) getting close to the limits of recovery from a 15 per cent. rise in over there. In the U.K., a greater improvement in the motor account could be expected in the

second half, yet the fact that GA's major rate increase came last September and that the group's U.K. expense ratio was running 4 points lower in this first half would seem to limit the scope here. The shares may be vulnerable then on prospective earnings of 10p or 11p.

By contrast a £21m. turnaround into a £21m. profit by Sun Alliance could provoke an opposite rethink about the rating here. To explain the performance is not easy, but the transfer from the marine account was apparently only a modest factor. At any rate, the upshot is that on earnings per share for the past 12 months (27p) the p/e stands at about 17, which is already usefully under the prospective average for the sector on most estimates. The U.K. fire account takes as much as 20 per cent. of SA's premiums and no boom was expected here against a rather favourable 1970. But it was the second half that stood to benefit from a 15 per cent. rise in industrial fire rates in January. As for the marine account—18 per cent. of premiums—the

known figures for 1969 and 1970 so far imply that the group could be drawing sizeable surpluses here over and above any contribution to current earnings. Investment income meanwhile is holding a 9 per cent. growth rate despite earlier cautions. In short, SA seems to be as fair a growth prospect as the sector.

See also Pages 17 and 18

### Clarkson

Although Clarkson International was talking a few months back about an encouraging start for its cutting tools, the recent trend in the engineering industry has been sluggish enough to rule out any really exciting progress for 1970-71 as a whole. So a pre-tax gain of 8 per cent. to £870,000 at half-time is a reasonable performance in the conditions. Clarkson had the benefit of a round of price rises in December, and was able to build up on the export side (30 per cent. of sales in 1969-70), and a higher proportion since then) to offset a flat U.K. market.

What remains obscure is the extent to which the benefits of integrating Tap and Die have still to be seen; after getting on for three years it could be unwise to hang too many hopes on this particular peg. Moreover, with only three months of the financial year left there is little time for any trading upturn to make its presence felt, suggesting that the full year is unlikely to produce more than £1.75m. pre-tax against £1.6m. Yet a prospective p/e of 12 on earnings of 7.4p a share at 88p can cope with the short-term doubts, while an upturn in the engineering industry could combine with internal factors—boosts are due from re-equipping and the new centralised distribution system—to make 1971-72 a more exciting proposition.

See also Page 17

### Fairclough

Leonard Fairclough has been one of the star performers in the contracting and construction sector this year, doubling from its March low ahead of yester-

day's interim figures and putting on another 13p to close at 245p after them. The figures are solid. Allowing for the Buchanan acquisition, which took Fairclough into drainage, sewerage construction and soft tunnelling, it looks as if there is a rise of a fifth or so for the original group in the reported half-time figure of £764,000 against £510,000 previously.

Five months ago, the problem for investors was to balance Fairclough's expansion on its own behalf against a marked slowdown in new contract announcements from the March-April/Fairclough consortium. Since then, however, the Government has been making encouraging noises about motorway and trunk road construction; major contracts picked up by Fairclough include the Gerrards Cross by-pass (in consortium with Amey), and with Marchewiel, the near-£16m. job on a section of the M.62—suggesting that the latter consortium, with its distaste for "buying" work, is happier about the margins now available. Given that, and with Buchanan's

specialty looking promising after the recent little Neddy rebrand, Fairclough's solid growth trend can be projected out again. Meanwhile, analysts' estimates vary between £11m. and £16m. for the year (the former remembering the kind first half weather) producing earnings of about 19.4p in the middle of the range and a p/e of 12.1. Nice to see a share that does not look expensive after the rise Fairclough has had already.

See also Page 17

### GUS/Henry

Neither the GUS counter-bid for A. and S. Henry nor the identity of the counter-bidder are any surprise. And the price, a little over 78p for a p/e of 18.3 on a three-year earnings average, is no better than Henry could expect on its declining trend. What United Drapery might reflect ruefully upon is the GUS and associates 27 per cent. holding in Henry. UDS can hardly have believed that it was stepping on such a well cultivated patch.

See also Page 17

## Engineering employers see no recovery till next year

BY COLIN JONES

ENGINEERING output is likely to fall to end-1968 levels by the end of this year and, even after the latest Government measures, no general recovery in the demand for capital goods is in prospect until well into 1972 at the earliest, states the Engineering Employers' Federation in the second of its annual economic reports published today.

This could lead to a further decline in employment in the industry, possibly by as much as 85,000 by the end of 1971, which would raise the unemployment rate in engineering to over 4 per cent.

### Pay claims

Wage inflation can be at least partly blamed for this deteriorating situation, the engineering employers state in an appeal for moderation in trade union claims for higher pay. "The number of jobs has shrunk, and will continue to shrink, so long as profits are undermined, in constant plans cut back, and capital eaten into by inflation," the report states.

"Those who persist in seeking extravagantly high wages, unrelated to the productivity of the work-people concerned, and to the ability of firms to pay, are causing a self-defeating policy," says the report. "Real wages are undermined by price inflation, and job security

is seriously threatened as businesses are faced with bankruptcy."

The present engineering claim, if conceded in full, would raise costs by 35-40 per cent., the employers estimate; its acceptance at a time when the industry's profitability has already been drastically eroded by cost inflation and low demand would be disastrous.

But it is not enough in the present situation for the Government to urge employers to resist extravagant wage claims, concludes the EEF study. This is because the balance of bargaining power in industry has shifted against employers, a point which is developed in a section dealing with the inadequacy of traditional labour market theories in explaining the present combination of high unemployment and rampant wage inflation.

The EEF report cites several factors which are thought to have contributed to the shift in the balance of bargaining power. On the employers' side, the cost of setting up a claim is held against the cost of taking a strike but industry may have become less able to afford stoppages partly because of increased integration and capital intensity but also because of the steady attrition of company finances.

Cases are becoming more common, states the EEF report, of companies so close to bankruptcy

that any strike or stoppage has to be avoided.

At the same time, trade unions are more able to prolong industrial action without undue harm to their members because of income-tax rebates and better redundancy and social security payments.

### Inequalities

In addition, the trend towards decentralised wage bargaining of plant level has weakened employers' bargaining power. The greater the decentralisation, the easier it becomes to pick off individual companies and to base pay claims upon comparability or inequalities.

The engineering employers conclude from this that the traditional palliative of "stop-go" probably cannot solve the wage inflation problem. "A real improvement will not come about," they continue, "unless and until the Government is prepared to take action to reduce the present bargaining strength of certain advantagedly placed trade union groups."

Unlike the first EEF annual economic report a year ago, to-day's study does not directly ask for further reflationary moves by the Government. But it questions "whether the measures already taken by the Government will lead to a strong recovery as is generally expected."

## BEA may end home first-class service

BY RAY DAFTER

BRITISH European Airways is seriously considering withdrawing its first-class service on domestic routes, the Air Transport Licensing Board was told yesterday.

Mr. James Scarlett, the airline's external affairs manager, said the withdrawal—possibly the spring—could coincide with certain improvements in standards on the economy services. Carrying first-class passengers on domestic short-haul routes was not an economic proposition, he said.

BEA is one of 10 airlines seeking higher fares. The others are Caledonian-BUA—yesterday renamed British Caledonian Airways—Cambridge Airways, North-east Airlines, Airun Air, British Islands Airways, British Midland Airways, Dan Air, Channel Airways and Loganair.

BEA is applying for 10 per cent. increases in home routes and 5 per cent. on trunk routes—between London and Glasgow, Belfast and Edinburgh—on November 1, followed by a further 5 per cent. on April 1. Mr. Scarlett, blaming inflation for the application, said higher fares would not halt losses but would reduce them to a less

burdensome level. Without increases losses before interest in 1971-72 on domestic routes would be £2.75m. By 1972-73 this loss could be £5.5m.

BEA's domestic fares were still low by international standards and low compared with domestic air fares in other countries, Mr. Scarlett went on.

He compared BEA's London-Glasgow fare of £11 with fares for similar distances on the Continent: Hamburg-Stuttgart, £18.40; Paris-Toulouse, £16.55; Malmö-Stockholm, £13.50.

Mr. David Davies, managing

director of Cambrian, said his airline and Northeast (both members of British Air Services) were applying for rises of about 10 per cent. on domestic services.

Mr. Charles Powell, for British Caledonian, asked for a 10 per cent. increase on the airline's Jersey route and 5 per cent. on trunk routes and the Glasgow-Southampton route on November 1 and a further 5 per cent. on trunk routes and the Glasgow-Southampton route on April 1.

The hearing continues to-day.

## Pilots want noon reply

THE BRITISH Airline Pilots Association executive last night gave British European Airways until noon to-day to respond to proposals for a wage increase for its 1,400 pilots before deciding on a future course of action.

On Tuesday, a referendum among BEA pilots gave the BALPA executive a mandate for a work-to-rule campaign. A BALPA spokesman, Mr. Gordon Hurley, said last night: "Talks broke down last Thursday when BEA imposed three totally unacceptable conditions

on further negotiations. We have made every attempt to get talking again."

"At the Corporation's request, we attended on informal meeting during the Bank Holiday, and yesterday the executive sent by hand proposals that we feel will allow negotiations to re-start. We have had no reply despite the urgency of the situation, and to-night advised the airline that we can defer a decision regarding industrial action no later than noon."

Completion of the contract unless

## Turriff sues City Corporation

BY NICHOLAS LESLIE

TURRIFF Construction Corporation has served a writ on the City of Edinburgh claiming damages in respect of sums due on a contract for Phase Two of the Barbican scheme signed in 1964. Turriff announced last week that it was withdrawing from the Barbican project because, it claimed, the City Corporation had repudiated the contract.

Subsequently the City Corporation counter-claimed that it was withdrawing from the contract and said that proceedings had been started against Turriff for damages over its withdrawal from the Barbican.

### More than £5.33m.

An appearance has already been entered on Turriff's behalf. The writ does not specify the amount which is being claimed for damages, but Mr. E. J. Elz, Turriff's director of Turriff,

said yesterday that it would probably be more than the £5.33m. claimed in a writ issued by Turriff in March but which was not subsequently served.

The latest writ names Turriff Construction, Ltd., as the first plaintiff and Turriff Construction Corporation, the holding company of TCL, as the second plaintiff.

TCL claims sums due on the 1964 contract, damages for repudiation of the contract by the City Corporation and also interest. In addition, TCL claims it should be indemnified by the City Corporation for claims by, or liability to, sub-contractors under sub-contracts entered into by them pursuant to the main contract.

The claim by the second plaintiff relates to an agreement dated May, 1969, whereby the City Corporation advanced Turriff to Turriff Construction Corporation to be repaid on com-

pletion of the contract unless Turriff gave notice of arbitration. It is a writ claiming for a declaration that, by reason of the City's repudiation of the main contract, Turriff is released from any liability actual or potential under a letter of guarantee dated May 5, 1969, and an agreement dated July 6, 1971.

Phased withdrawal Turriff withdrew from the Barbican—where its original contract in 1963 was worth £8m.—after it asked the City Corporation for work to proceed on a basis whereby payment was made on each section as it was completed. After three weeks Turriff had not received a reply from the City, and it subsequently announced it would stage a phased withdrawal consequent on repudiation of the contract by the City. Lack of a positive answer was seen by Turriff as a repudiation of the contract.

## R-R (1971) has turned corner—Lord Cole

Financial Times Reporter

LORD COLE, chairman of Rolls-Royce (1971), said in a message to employees of the Derby engine division yesterday that the company has turned the corner—meaning the development of the RB-211 engine.

The message, placed on the Tri-Star notice board, said that two 150-hour engine tests had been completed and the results had been most encouraging. More tests were required before the engine could obtain a certificate of airworthiness but, he went on, "the corner is turned and I would like to congratulate all concerned."

Lord Cole's remarks indicate he is satisfied the company is well on the way to providing the engine specified by airline customers of the Lockheed TriStar. He added: "The hard work and sustained effort made by all sides is beginning to have its effect and we are now confident that the RB-211 engine will be a success."

## Payments surplus cut for 1970

By William Keegan

THE 1970 U.K. balance of payments surplus on current account has been revised downwards by £42m.

New figures published in the Central Statistical Office's annual Pink Book ("United Kingdom Balance of Payments 1971") show a current surplus for 1970 of £579m., against the £621m. previously estimated. The figure for total current inflow is the same at £1,127m.

Further information on investment and capital flows has brought a new estimate of £115m. for this category in 1970, against the £136m. originally published. And the balancing item has been revised downwards from £130m. to £93m.

It also turns out that previous estimates of the outflow from the U.K. in the form of export credit were much too high. When allowance is made for advance payments by overseas customers through U.K. banks, the 1970 outflow comes down from £302m.—original estimate—to £234m.

## LOB aids 1,000th move

THE 1,000th company to move with the help of the Location of Offices Bureau has recently completed the first stage of its move into new head office premises in Stevenage.

Friden, the Singer Organisation's business equipment division, will have decentralised 180 jobs from the second stage of the move is completed.

Since it was established in 1963, the Bureau has helped in moving nearly 50,000 jobs out of the central area, with a further 18,000 job moves already planned.

to transferees when all necessary

conditions have been satisfied to give the transferee as between himself and the company the right to have the transfer registered.

Under the new Council ruling, buying brokers will be permitted to pay against delivery of certified transfers of matching transfers and certificates provided they are accompanied by the appropriate form of certificate and acknowledgment.

To protect their clients' position, buying brokers should indicate in precise registrations with matching certificates with the company secretary of the registered office.

## More UCS men redundant

BY ANDREW HARGRAVE, SCOTTISH CORRESPONDENT

CLYDEBANK, Sept. 1.

MR. ROBERT C. Smith, the liquidator, announced a further 327 redundancies at Upper Clyde Shipbuilders to-day as the inquiry into the social and economic consequences of its collapse began here.

This brings the total declared redundant in the past three weeks to 728, and to underline the sombre background to this inquiry, sponsored by the Scottish TUC, half the dismissals (which take effect on Friday) will be from the Clydebank yard, less than 200 yards from the hall where the inquiry is being held.

A further 700-or-so redundancies are expected to be announced before the end of this month.

This afternoon, Mr. Alex Ferry, district secretary of the Amalgamated Union of Engineering Workers, reminded the inquiry team, headed by Professor Raymond Hilsley, that the UCS tragedy was only part of the problem affecting the Greater Glasgow area of which Clydebank is part.

In 20 months since the beginning of last year, he estimated a loss of 10,000 jobs—3,500 in engineering, 3,500 in UCS (including about 1,000 in Clydebank) and a further 3,000 in other local industries.

Against this, he could recall only two new enterprises (both in Glasgow) representing job prospects of between 500 and 1,000 altogether.

Only this morning, he had learned that the North British Engine works in Scotland, near the doomed UCS yard, which had provided steady employment for over the years, would shed 500 workers by the end of this year.

In Clydebank, where, according to Provost Robert Fleming, 7,643 jobs had been lost in the period 1964-1970, mass unemployment was already about one in eight compared with the high Glasgow average of 10.6 per cent.

### Rates pressure

This created a pressure on the rates (rates rebates increased by 50 per cent. in a year in 1970-1971) and rents, which in turn was expected to lead to an increase in rates and reduced the attraction of the town to new industry.

In answer to questions, Mr. Ferry recognised that unemployment would have an adverse effect on both industrial relations and the workers' attitudes towards productivity.

There were also clear signs of rising emigration, Mr. Ferry spoke of a "considerable number of inquiries" at his office during the past six to nine months relating to jobs, conditions and wages in England and Europe, particularly in Germany and the Netherlands.

He also indicated that Clydebank, emigration figures had risen from 130 in 1965 and 1966 to between 500 and 600 in 1969 and 1970.

Earlier to-day, Mr. James Reid had given a somewhat politically charged evidence on behalf of the UCS ship stewards.

He concentrated on the claim repeatedly heard from the shop stewards that UCS had been on the road to viability, and that its demise was a deliberate political act engineered by the Government.

To support this, he distributed copies of the memorandum prepared by Mr. Nicholas Ridley, now Parliamentary Under-Secretary at the Department for Trade and Industry, before the election, which contains the now well-known phrase of cutting Upper Clyde by putting in a Government "butter knife."

Mr. Reid, too, cited figures of unemployment and reduction of labour in the industry. There were, he said, 720 unemployed shipyard workers registered in Glasgow alone, and the Govan yard, the former Fairfields, shed about a third of its skilled labour force, nearly 900 men, in the last 18 months.

The inquiry continues to-morrow.

£7m. order

James MacDonald writes: Scott Lithgow, the lower-Clyde shipbuilding group, has received an order worth about £7m. from Sugar Line—part of the Tate and Lyle group—for two 25,000 deadweight ton bulk sugar carriers.

The ships, which will be built at the Cartside yard in Greenock, will be delivered in 1973 and 1974. Mr. A. Ross Belch, managing director, said yesterday the contract raised the group's order book to 33 ships, valued at about £110m.

Commenting on the lower-Clyde yards' need for more shipyard workers, Mr. Belch said that applications had come from a number of areas in Scotland, including some, of course, from Upper Clyde Shipbuilders.

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